APPENDIX S
Preparation Guidelines for Project Study Report-Project Development Support Project Initiation Documents

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Appendix S – Preparation Guidelines For Project Study Report-Project Development Support Project Initiation Documents

CHAPTER 1 – Introduction

Project Study Report-Project Development Support Project Initiation Documents

The development of a Project Study Report-Project Development Support (PSR-PDS) Project Initiation Document (PID) provides a key opportunity for Caltrans and involved regional and local agencies to achieve consensus on the "purpose and need," scope, and schedule of a project.

This appendix provides concepts and best practices for preparing a PSR-PDS for projects funded through the State Transportation Improvement Program (STIP), projects funded by others, and Long Lead State Highway Operations and Protection Program (SHOPP) projects. This appendix also provides a description of the information that should be contained in the PSR-PDS, and scoping tools needed to collect and organize information during the project initiation phase.

To appropriately apply the guidance described in this appendix, review the intent of policies and procedures in Chapter 9 along with Appendix L of this manual.
The PSR-PDS is only one type of PID. While this appendix provides guidance on preparing a PSR-PDS, Chapter 9 and Appendix L provide the foundation for the understanding and knowledge necessary to develop any PID.

Purpose for Project Study Report-Project Development Support (PSR-PDS) PID

The purpose for using the PSR-PDS document is to gain approval for the project to move into the Project Approval and Environmental Document (PA&ED) phase.

The PSR-PDS is used to estimate and program the support costs necessary to complete the studies and work needed during PA&ED. The PSR-PDS does not provide conceptual approval as defined in Chapter 9. If conceptual approval is required, the project sponsor should consider using the Project Study Report (PSR) format as defined in Appendix L instead of the PSR-PDS format. The Project Development Team (PDT) should discuss the appropriate format to achieve project sponsor goals during the pre-PID meeting. If appropriate, a local agency may submit a request to the Caltrans District Director for approval to use the Project Study Report (PSR) in lieu of the PSR-PDS.

At this level of the project, the required information is reduced with much of the detail being completed during PA&ED. Because of the reduction in level of effort, specific work must be completed and is listed in this document (e.g. Pre-PID meeting, Risk Assessments and Commitment).

Applicability

These guidelines generally apply to all STIP and specially funded projects (projects funded by others) on the State Highway System (SHS) and any segment of a transit project within the State highway right of way. These guidelines also apply to Long Lead SHOPP projects to program support costs. These guidelines are not intended for use on transit projects unrelated to the SHS or on STIP projects off the SHS.

CHAPTER 2 – PSR-PDS Process

ARTICLE 1 - General

Project Development Process

The project development process begins with conceptual studies and continues through to the completion of construction. The project development process is tied to legal requirements and melds engineering requirements, a process for stakeholder and community input, and Caltrans approval steps with the environmental process. The principles of context sensitive solutions (CSS) including a focus on community involvement, is integrated into the project development process.

Timing

A completed PID is required before a project is included into either the STIP or SHOPP or prior to getting an approval to move to PA&ED for a project-funded-by-others (as defined in Chapter 9 of this manual). Any agency preparing a PSR-PDS is responsible for developing a reasonable schedule that is necessary to produce a PSR-PDS.

Project Management

A Caltrans project manager is assigned for every capital outlay project including locally implemented projects.

Registered Civil Engineer

The PSR-PDS shall be prepared under the direction of a registered Civil Engineer or other appropriate licensed professional (e.g., Landscape Architect).

Purpose and Need

A project must satisfy a clearly defined purpose and need. The project sponsors identify the initial transportation deficiency. The project must meet system strategies as defined in State, regional, and local plans, goals, and objectives. The project should reflect values of the community. Caltrans policy is to evaluate alternative solutions that avoid or reduce environmental impacts and to select the alternative that causes the least overall environmental damage and that satisfies the transportation purpose and need.

Additional information and resources on Purpose and Need statement development can be found at the following website: http://www.dot.ca.gov/hq/env/emo/purpose_need.htm.

Context Sensitive Solutions

The PSR-PDS provides an opportunity to consider the implementation of CSS from planning through construction. CSS implementation offers a process that focuses on community involvement and the flexibility to balance transportation needs with community values. The PSR-PDS also provides an opportunity to address the needs of various modes of transportation (e.g., vehicles, mass transit, rail, bicycle, and pedestrian).

ARTICLE 2 – Preparation Procedures

This article describes the sequence of key activities and best practices that take place during the development of a PSR-PDS.

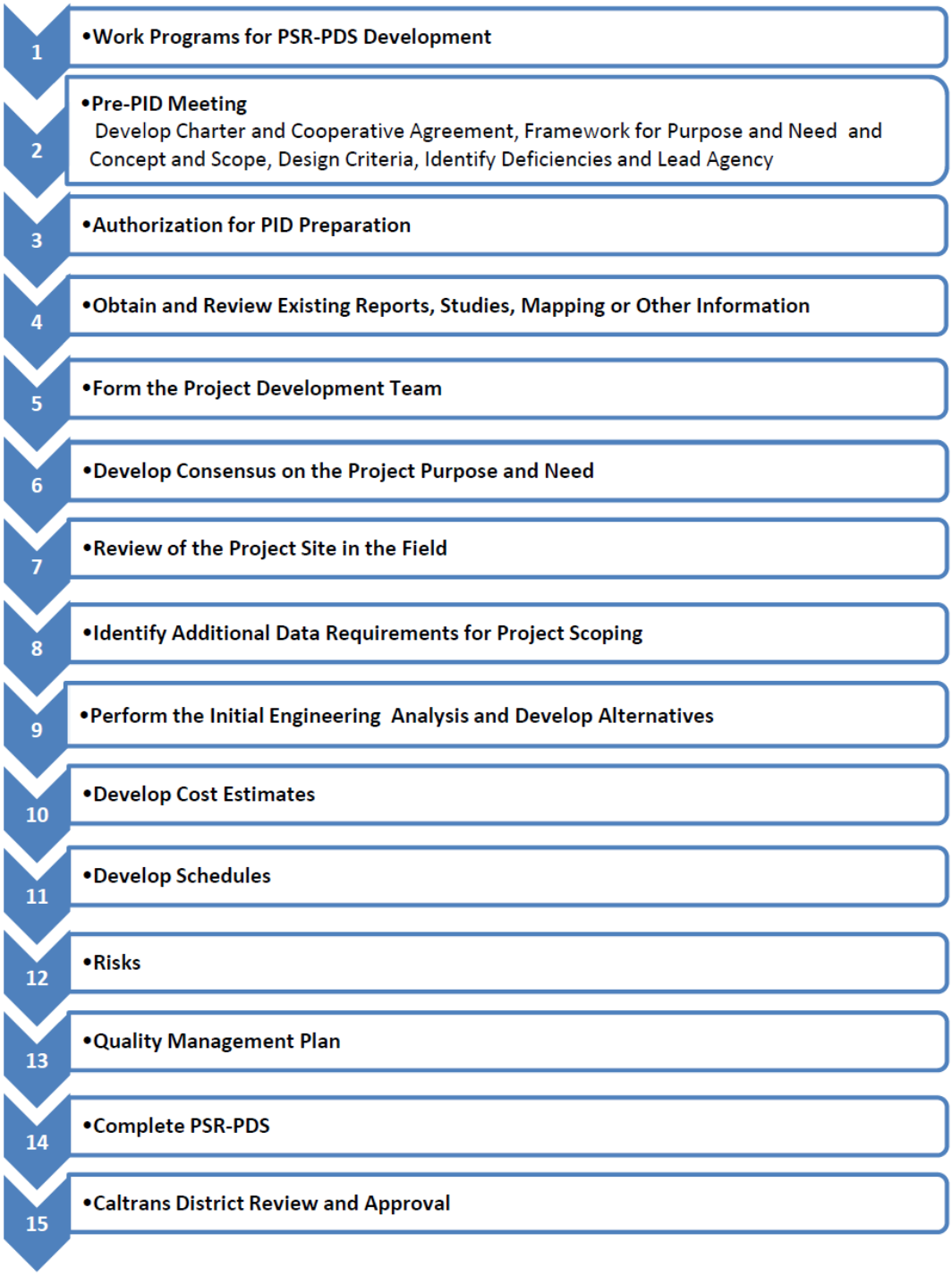
For an overview of where the PSR-PDS fits into the project development process, see Chapter 8 of this manual.

A graphic overview of the project development process can be found at Division of Design's website http://www.caltrans.ca.gov/hq/oppd/pdwt/revised/fd1.pdf

For project teams, the Project Development Workflow Tasks (*PDWT)* provides a comprehensive flow of project delivery tasks and can be used as a structured step-by-step guide for project development tasks performed by project engineers. Although the *PDWT* primarily describes design activities performed by the project engineer, it also provides the framework for the flow of tasks by all the functional units.

The *PDWT* can be found on Division of Design's website:
http://www.caltrans.ca.gov/hq/oppd/pdwt/revised/pdwt.htm

The PSR-PDS preparation procedures are summarized in the chart below with detailed information in the *Project Development Workflow Tasks Manual (PDWT)*. Guidance on the content of the PSR-PDS is discussed in Chapter 3 of this appendix.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1. Work Programs for PSR-PDS Development

District Deputy Directors (DDDs) for Planning develop PID work programs on an annual basis. The work programs are a listing and schedule of proposed projects requiring resources. There is a work program for the STIP (which includes projects-funded-by-others as defined in Chapter 9 of this manual) and SHOPP. DDDs submit the work programs to Headquarters Division of Transportation Planning, Office of Plans/Project Coordination (OPPC) for approval. OPPC establishes the procedures for opening an expenditure authorization for either the preparation of all PID work to include PSR-PDS PIDs or independent quality assurance (IQA) work. OPPC monitors the resources and the delivery of PIDs (including PSR-PDS PIDs) listed in the work program.

The work program for Long Lead SHOPP projects must be consistent with the 10-Year SHOPP Plan and is developed with the concurrence of the SHOPP Program Managers.

The work programs for STIP projects are developed in partnership with local and regional transportation agencies. Either Caltrans or a local agency may prepare a PSR-PDS for STIP projects. If requested by a local agency, Section 65986.5 of the Government Code provides that Caltrans shall have 30 days to determine whether it can complete the requested report in a timely fashion (i.e., in time for inclusion in the next STIP). If Caltrans determines it cannot prepare the report in a timely fashion, the requesting entity may prepare the report.

Work programs for projects-funded-by-others are developed in partnership with local agencies, regional agencies, or developers. Caltrans is responsible for providing IQA on all projects-funded-by-others.

2. Pre-PID Meeting for STIP, Projects-Funded-by-Others, and Long Lead SHOPP Projects

Regardless of who prepares the PSR-PDS, a meeting with Caltrans and the appropriate local entity (or entities) shall be held. This is a required meeting with all entities to develop the Project Charter. Input from all parties is required at the earliest possible stage and continues throughout the process. The project manager should take the lead in coordination activities.

The purpose of the pre-PID meeting is to communicate a shared view of the project and to establish an understanding of the procedures, roles, and responsibilities before the project initiation process begins. The following are sample agenda items to be covered during the Pre-PID Meeting:

- Prepare and finalize Charter and Cooperative Agreement for reimbursable work.
- Review the PSR-PDS and PID development processes.
- Set the framework for getting consensus of purpose and need.
- Set the framework for agreeing on the design concept and scope. Ideally, the design concept and scope will evolve from the transportation system or regional planning process. The engineering specifics of the design scope should be discussed. These include the major features of work such as the number of lanes (current and future), right of way requirements, and interchange type and location.
- Agree on the basic design criteria.
- Identify known deficiencies. The design scoping index found in Appendix L of this appendix can be used to document known deficiencies and highlight areas requiring

further investigation. Examples of deficiencies to consider are: structures with nonstandard vertical or horizontal clearances; inadequate bridge railing; pavement in need of rehabilitation; deteriorated or inadequate drainage systems; narrow or deteriorating shoulders; lack of continuity or the deficiencies of bicycle or pedestrian facilities; replacement landscaping; ramp metering; nonstandard guardrail; maintenance worker safety; and seismic retrofit requirements.

- Lead Agency - Discuss when Caltrans is the NEPA and/or CEQA lead agency. Pursuant to SAFETEA-LU Section 6004 and/or 6005, Caltrans is the NEPA lead agency. FHWA assigned, and Caltrans assumed, all of the United States Department of Transportation (USDOT) Secretary's responsibilities under NEPA (for more information please see http://www.dot.ca.gov/ser/vol1/sec6/ch38nepa/chap38.htm). NEPA lead cannot be delegated. Caltrans is the CEQA lead agency for improvements projects on the State Highway System. In limited cases, and only when it is in the best interests of the State, the Department may delegate CEQA lead agency status to a local agency. (for more information see: http://www.dot.ca.gov/ser/downloads/memos/CEQA_Lead_Agency_24Jun04.pdf

3. Authorization for PSR-PDS Preparation

The project initiation phase begins with the opening of an expenditure authorization. The project manager obtains an expenditure authorization to initiate the project initiation process.

See Task PO1 of the PDWT.

4. Obtain and Review Existing Reports, Studies, Mapping or Other Information

To adequately prepare a PSR-PDS, it is essential to obtain the best available and most current maps and plans, including right of way maps and as-built plans. Ideally, three dimensional (3-D) digital data; e.g., MicroStation design files, Digital Elevation Models (DEMs), Digital Terrain Models (DTMs) should be used. Other resources include Digital Highway Inventory Photography Program (DHIPP) images, aerial photography mosaics, orthophotography, LiDAR, and Google Earth. This information serves as the basis for the conceptual design, development of alternatives, quantities and estimates, and exhibits. The use of GIS and visualization software to collect and view the data is encouraged. Minimal field and office survey activities may be performed to collect new data or transform existing data to the project datum and units. Refer to the Survey Needs Questionnaire found in Chapter 5, Article 8 of this Appendix for details on datums.

The Transportation Concept Report or Route Concept Report (TCR/RCR), District System Management Plan (DSMP), Regional Transportation Plan (RTP), Congestion Management Program (CMP), 10-Year SHOPP, the State Implementation Plan, local plans, other reports and studies, and Complete Streets concepts should be reviewed. Appropriate information from these reports can serve to document the need and scope of the project. Further discussion on these documents can be found in the Transportation Planning Scoping Information Sheet, found in Chapter 5, Article 4 of this Appendix, and Chapter 1- Introduction, and Chapter 4 - Programming of the PDPM.

Important background information can often be obtained in previous related or adjacent studies. A search and review of project history files and previously studied but suspended projects can give a historical perspective to the current proposal.

See Tasks PDWT – P8-P26 for further guidance on additional data and input.

5. Form the Project Development Team (PDT)

The Caltrans District Director concurs on the members of a PDT for each project, regardless of who is preparing the PSR-PDS.

The PDT is comprised of the assigned Caltrans project manager and representatives from the district project delivery, transportation planning, legal, maintenance and traffic operations units, and a Regional Transportation Planning Agency (RTPA) representative. Representatives from other functional units and local and regional entities are added as needed. See Chapter 8, Section 4 of the *PDPM*.

If the PSR-PDS is to be prepared by a local entity, the local entity shall furnish Caltrans a list of appropriate PDT members.

See Task P06 PDWT for further guidance on forming a PDT.

6. Develop Consensus on the Project Purpose and Need

It is crucial for the PDT to build PIDs on the project purpose and need statement early in the project development process. The PDT must identify the transportation deficiencies and describe underlying transportation need. The PDT must agree on the primary objectives that will be fulfilled by constructing the project and define those objectives as the project purpose.

The project sponsor must concur on the purpose and need. Primary stakeholders must have consensus on the project purpose and need.
For more information about developing purpose and need statements refer to: http://www.dot.ca.gov/ser/downloads/general/PN_Report.pdf

Consider using one or more of the value analysis tools to develop consensus on purpose and need for complex projects.

See Task P02 of the PDWT for further guidance on project purpose and need.

Refer to http://www.dot.ca.gov/hq/env/emo/purpose_need.htm for further guidance on purpose and need.

7. Review of the Project Site in the Field

It is important that the project team make an initial review of the project in the field. This should be an ongoing activity as needed. Field reviews often identify project features that may otherwise not be noticed. The reviews should focus on factors that could affect the project.

In addition, it is important to incorporate Complete Streets (Reference DD-64-R1). Bicycles and pedestrians are permitted on all state highways, except for some freeways (see Chapter 31,

Section 3 of this manual); therefore roadway shoulder and sidewalk geometrics and conditions are a part of the scoping process. The preferred way to assess conditions for bicycling and walking is by conducting a field review while bicycling and walking. See *Highway Design Manual Chapter 1000* for bicycle geometric and surface quality guidance.

If pedestrian facilities do not exist, consideration should be given to them if land conditions are such that pedestrians could be expected to regularly move along the highway. If the existing paved shoulders are narrow, worn paths can be an indicator of where pedestrian travel is occurring. If pedestrian facilities exist, they need to be upgraded to comply with DIB 82.

See Tasks P25, and P26 of the *PDWT* for further guidance on field reviews.

8. Identify Additional Data Requirements for Project Scoping

Refer to the tools in Chapter 5 of this appendix to identify data needs and issues that should be considered or studied to properly scope the project. The use of the Design Scoping Index found in Appendix L can assist the project team in properly scoping a project. The Design Scoping Index can be used to identify facility deficiencies and the concerns of stakeholders. The PDT should evaluate which deficiencies can be addressed given the purpose and need, program definition, and funding constraints.

See the *PDWT* Flow Chart P01-P31 and Flow Chart P32-P62 for further guidance on identifying data requirements.

9. Perform the Initial Engineering Analysis and Develop Alternatives

Perform the Initial Engineering Analysis-PSR-PDS (STIP, Projects funded by others, and Long Lead SHOPP Projects).

The primary focus of the initial engineering analysis is to establish a reasonable study area for alternative development utilizing existing data.

Develop Alternatives

The alternative development effort should focus on identifying the project factors that must be studied or resolved. A comprehensive list of these factors is essential in estimating the effort (resources and time) required to complete PA&ED including technical studies, continued development and analysis of alternatives, public outreach, and identifying the preferred alternative.

For alternative development, the perimeter of a study area must be delineated, as well as identifying the major work elements of the alternative.

Develop alternatives that will satisfy the project purpose and need, are cost effective, and will avoid or minimize environmental and right of way impacts. Involve stakeholders early and use context sensitive solution principles to develop project alternatives.

In the development of alternatives for the PSR-PDS, several key areas must be considered: environmental compliance, structures, materials, landscaping, permits, local and regional input,

right of way, mandatory and advisory design standards, traffic operations, and alternative transportation modes already in place (i.e., mass transit, rail, bicycle and pedestrian facilities).

If developing alternatives for freeway projects, see Chapter 31 of this manual for Streets and Highways Code requirements regarding impacts on pedestrian and bicycle transportation routes.

A. Environmental

The environmental unit prepares a Preliminary Environmental Analysis Report (PEAR). For projects sponsored by others, the implementing agency assigns/contracts with an environmental team to complete the PEAR. The PEAR includes:

- All alternatives capable of functioning adequately per Caltrans policies.
- A discussion of environmental resources and a description of the potential project issues or impacts, which could delay the project or affect any project alternative.
- Description of studies that are needed to complete an environmental evaluation (noting as necessary any seasonal constraints for these studies).
- A recommended environmental determination/documentation and a tentative schedule for its completion. If an environmental document is required, specify the lead agency for its preparation.
- An initial site assessment (ISA) for hazardous waste, if the project includes the purchase of new right of way, excavation, and/or structure demolition or modification.
- Required or anticipated permits or approvals.

Refer to the *Standard Environmental Reference (SER)* for further guidance on the PEAR. See Chapter 5, Article 5, of this appendix for general guidance on the PEAR scoping tool.

See *PDWT* Flow Chart P32 -P62 for further guidance on developing alternatives.

B. Design Standards

For PSR-PDS projects being used to program support costs, deviations from design standards shall be identified and described. A listing of the anticipated design standards that may likely be deviated from is required. Detailed design fact sheets are not required at this stage in the process. Establishment of a project-specific strategy to evaluate design exceptions for various alternatives should be discussed with the Headquarters Design coordinator early in the project initiation process to identify potential fatal flaws. Refer to Index 82.3 of the Caltrans *Highway Design Manual* and Chapter 21 of this manual for further discussion of design standards. See Chapter 5, Article 2 of this appendix for general guidance on the PID Design Scoping Index.

C. Structures

The method of providing the necessary preliminary studies shall be discussed with the HQ Division of Engineering Services (DES) Technical Liaison Engineer and Project Liaison Engineer assigned to the district. The Technical Liaison Engineer shall use a streamlined estimating process, such as square-footage costs to develop a “Structure PSR-PDS Cost Estimate” for inclusion into the PSR-PDS document when bridge and/or nonstandard retaining wall work is necessary. The Project Liaison Engineer will provide recommendations on the preparation of the DES Scoping Checklist found in Chapter 5, Article 11 of this appendix. The DES Scoping

Checklist is to be prepared by the district and will be reviewed by DES during the district review process.

For the PSR-PDS, the level of detail in the DES Scoping Checklist and "Structure PSR-PDS Cost Estimate" is limited to information required to develop accurate work plans for the PA&ED phase.

D. Traffic Engineering Performance Assessment (TEPA)

The TEPA produces technical findings and recommendations that will:

- Help establish the project purpose and need.
- Identify major performance deficiencies within and adjacent to the (initial) project limits.
- Determine the scope and magnitude of the Traffic Analysis Study/report that will be performed/produced during the PA&ED phase to:
    - Produce a complete scope of work.
    - Support decision making on the inclusion of critical design features and traffic elements (e.g. approval of nonstandard geometric design features).
    - Verify that the proposed infrastructure investment will satisfy the project purpose and need.

The TEPA will either be prepared by the Division of Traffic Operations. If the PSR-PDS is prepared by a local or regional agency (or their agent) the TEPA will be prepared after one or more consultations with the Traffic Operations functional managers responsible for:

- Electrical and Intelligent Transportation Systems
- Traffic Control Systems and Devices
- Highway and/or Freeway Operations
- Safety Management
- Traffic Management Systems
- Traffic Safety Systems
- Traffic Management Planning (for the construction phase)

See Chapter 5, Article 5, of this appendix for general guidance on the Traffic Engineering Performance Assessment. Detailed traffic engineering analysis will be performed during the PA&ED phase.

E. Stormwater

Since the main purpose of the PSR-PDS is only to estimate the resources needed to complete PA&ED, the expected level of stormwater information for a PSR-PDS is going to be much less than a regular Project Study Report. The PSR-PDS evaluation will mainly focus on determining if there will be any significant impacts to the project alternatives, right-of-way needs, or project costs due to the need to incorporate treatment Best Management Practives (BMPs) for compliance with stormwater requirements. See Chapter 5, Article 3 of this appendix for general guidance on the PSR-PDS Stormwater Documentation scoping tool.

F. Right of Way

Summarize the anticipated right of way, utilities, and railroad impacts for each alternative using the Conceptual Cost Estimate Request – Right of Way Component found in Chapter 5, Article 7 of this appendix. Preliminary estimate mapping showing the property boundaries and project limits will help to estimate the number, area, and magnitude of parcels required for acquisition and the likely number of easements needed. The level of study is intended to develop an order of magnitude cost estimate for potential right of way needs to identify additional studies that may be needed during PA&ED.

Utilities

Identify existing utilities and potential relocation activities using existing, available information (e.g. permit search, as-built drawings, field review). The level of study is intended to develop an order of magnitude cost estimate and to identify additional studies that may be needed during PA&ED.

Railroad

Identify rail lines in the vicinity of the project and indicate possible impacts

G. Local and Regional Input

Use of a CSS approach promotes community involvement in development of alternatives. Local and regional input is necessary in the development alternatives and in the delineation of the study area. Local planning (e.g., current and proposed land use) can have a significant effect on the local and regional planning transportation system, which affects the identification of alternatives and project specific features. District transportation planning units can facilitate an understanding of community objectives. The Transportation Planning Scoping Information Sheet also serves as a tool to gain understanding of community objectives. See Chapter 5, Article 4 of this appendix for general guidance on Transportation Planning Scoping Information Sheet.

10. Develop Cost Estimates

Capital Cost Estimate - For the PSR-PDS capital cost estimates, an order of magnitude cost estimate should be used. See PSR-PDS Estimate found in Chapter 4 of this appendix for guidance on preparing cost estimates. For PSR-PDS prepared by others, the local agency may elect to utilize a more detailed capital cost estimate. See the PSR-PDS Cost Estimate in Chapter 4 of this appendix for a suggested cost estimate format for this purpose.

Support Cost Estimate - Estimate the support costs that will be needed to complete PA&ED. If federal dollars are used on any portion of the project and local agency support costs are considered a “soft” match for federal reimbursement, identify and discuss the local agency support cost. Complete the Capital Support estimate for STIP, projects funded by others, and Long Lead SHOPP projects.

11. Develop Schedules

Develop a schedule for delivery of major milestones of the PA&ED phase (Begin Environmental, Circulate ED, and PA&ED) and the anticipated funding year for construction.

12. Risks

Using the PSR-PDS in lieu of a PSR may cause risks to the scope cost and schedule of the project. Potential risks shall be evaluated and discussed by the PDT, and ownership of the risks shall be identified. A risk assessment for the process and potential impacts to the overall project needs to be completed to identify, classify and quantify the risk impacts to the various disciplines. Additionally, the ownership of the risk must be identified. For locally implemented projects, the local agency is responsible for creating and maintaining the risk register. This information needs to be summarized within the PSR-PDS. Refer to Chapter 5, Article 10 of this appendix for general guidance on the Risk Register.

13. Quality Management of Project

For projects sponsored by others, Caltrans shall provide IQA per DD-90. The Department's IQA activities can be described as a cross functional review of the final draft of the product which includes: functional reviews of the sub-products (e.g. PEAR), providing advice and consultation during the development of the product, and attendance at PDT and other project meetings as needed.

The project sponsor and/or implementing agency must develop and follow a Quality Management Plan. Refer to Chapter 5, Article 9 of this Appendix for general guidance on the Quality Management Plan.

14. Complete PSR-PDS

After developing alternatives and evaluate impacts, prepare the PSR-PDS in accordance with the guidance in Chapter 3 of this appendix.

If funds that are not included in a state programming document are used, cooperative features should be summarized in this section. An executable cooperative agreement will be deferred, but it should be completed at the beginning of the PA&ED phase. Refer to Chapter 16, Cooperative Agreements, of this manual for policies on cooperative agreements.

15. Caltrans District Review and Approval

Statutes require Caltrans to review, and if appropriate, approve all PIDs, including the PSR-PDS, prepared by a local agency within 60 days of submittal of the PID as long as the review does not jeopardize the delivery of projects listed in the approved STIP.

If the PSR-PDS is not approved, notification by the district will include the reasons the PSR-PDS is unacceptable, including reference to any inconsistencies with Caltrans policies or standards.

Caltrans will review and approve the revised PSR-PDS within 30 days. However, in the event that the document does not meet with Caltrans standards or policies, it may be necessary to return the PSR-PDS to the local entity for further revision. The review and approval cycle will then be repeated.

The Caltrans District Director or Deputy District Director, if delegated, is responsible for approving the project's scope, schedule, and cost within these established guidelines and may exercise judgment and flexibility in approving the PSR-PDS document. The PSR-PDS must be

approved by the District Director, or Deputy District Director if delegated after review by the PDT. Project managers are to endorse the decision by signing an "Approval Recommended."

CHAPTER 3

Article 1
Outline for PSR-PDS

General

The purpose of this outline is to identify the key elements to document in the PSR-PDS. As an initial scoping and resourcing document; the PSR-PDS must identify the key issues of the transportation deficiency, any major elements that should be investigated, and the PA&ED effort and resources needed to complete the studies and implement the project. The attachments should contain summary information only needed to support or clarify information in the body of the report. Chapter 6 of this appendix has templates that present a guideline for preparation of the PSR-PDS.

Outline

Cover Documents

- Title Sheet

The title sheet provides "at a glance" project identifiers, the primary reason for writing the report, and dated approval signatures.

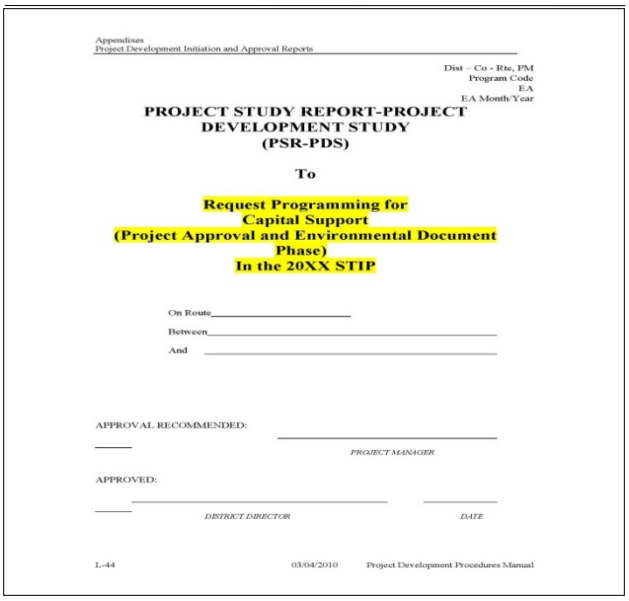
Project identifiers are the district, county, route, and post miles; as well as the official project description. See the *Plan Preparation Manual, Section 2-2.1B 2* for examples of project identifiers.

Clearly state the reason for the PSR-PDS on the title sheet. It may be one or a combination of the following bullets. Use "AND" to separate multiple requirements.

- Request for Programming in the (year) STIP for Capital Support of the Project Approval and Environmental Document.
- Request approval of a locally funded project to proceed to PA&ED phase (as defined in Chapter 9 of this manual).
- Request approval to proceed with the formal studies for a Long Lead SHOPP project.
- Request scope approval of projects-funded-by-others (as defined in Chapter 9).
- Authorize a cooperative agreement.

The following figure depicts a sample title sheet with the reason for the PSR-PDS clearly shown.

Figure – 1



Appendixes
Project Development Initiation and Approval Reports

Dist – Co - Rte, PM
Program Code
E.A
E.A Month/Year

PROJECT STUDY REPORT-PROJECT DEVELOPMENT STUDY (PSR-PDS)

To

Request Programming for Capital Support (Project Approval and Environmental Document Phase) In the 20XX STIP

On Route_____
Between_____
And _____

APPROVAL RECOMMENDED:
_____ _____
PROJECT MANAGER

APPROVED:
_____ _____ _____
DISTRICT DIRECTOR DATE

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For projects sponsored by others, a signature indicating the acceptance of the risks identified in the risk register must be included on the title sheet. The PSR-PDS must include the endorsement of the PM and "APPROVED BY" District Director or Deputy District Director as delegated. Edit the signature block as appropriate.

- Vicinity Map (Separate Sheet)

The vicinity map is a district, county, or city map showing all State highways and major local roads when pertinent. It should be placed on a separate page and should include the study limits, major topographic limits listed in the report, and a north arrow.

- Registered Professional Stamp (Separate Sheet)

The Registered Professional stamp or seal and number with signature shall be placed on a separate sheet, which shall be part of the report. Also included on this sheet shall be a statement indicated that the registered profession is attesting to the technical information contained therein and the engineering data upon which recommendations, conclusions, and decisions are based. This seal does not constitute approval of the PSR-PDS.

- Table of Contents (Separate Sheet)

On a separate sheet, place a table of contents that includes all the elements of the PSR-PDS.

- Main Body of PSR-PDS

1. Introduction

The introduction is a summary of the information presented in the report. The introduction should be no more than two paragraphs or a brief opening sentence with the information summarized in tables. The template includes an optional table that can be expanded or condensed to fit the individual project.

In the introduction, identify:

- The problem.
- The range of alternatives and magnitude of capital costs.
- The Caltrans resources needed to complete the proposed components (e.g., PA&ED phase and/or IQA).
  - Identify the PA&ED milestone and the anticipated funding year for construction.
- The proposed funding sources.
- The initial project category.
- Type of facility as designated on a current or proposed route adoption map.
- Any known project approvals anticipated for each alternative (See Chapter 12 of this manual for more information.)

2. Background

The background should briefly describe:

- A description of the facility.
- Project sponsors and project proponents.
- A discussion on local and regional agency involvement in the development of purpose and need.
- A discussion of any actions or commitments that have taken place to date regarding the proposed project.
- Context Sensitive Solutions
- Complete Streets

3. Purpose and Need

These statements together should succinctly answer the question: why this project and why now? The PDT, in conjunction with the project sponsors and key stakeholders, must develop the purpose and need statement. The purpose and need statement shall remain consistent through the entire project development phase. Additional information on the development of purpose and need statements can be found at: http://www.dot.ca.gov/hq/env/emo/purpose_need.htm

Purpose

The project purpose is the set of project objectives that will be met, which addresses the transportation deficiency (i.e., the project need). It is important to identify the primary and secondary objectives that are met by this project. While the secondary objectives may be a factor in the scoping of the project (e.g., minimizing impacts to the environment, meeting American with Disabilities Act (ADA) requirements, etc.), the purpose statement should focus on the primary objectives of the project.

Need

The project need is an identified underlying transportation deficiency that needs correction. While there may be several associated deficiencies identified in the project area, it is important for the PDT to agree on the primary deficiency or deficiencies that create the need for the project. A need is supported by data that indicates, but is not limited to, a safety issue, reduced mobility, limited capacity for the transportation

demand, the lack of reliability, gaps in or between transportation systems, or limited life of the facility. The details are discussed in the following section on "Deficiencies."

4. Traffic Engineering Performance Assessment

The purpose of the Traffic Engineering Performance Assessment (TEPA) is to produce findings and estimates related to existing performance deficiencies, expected performance benefits and impacts, the scope of work and features needed to meet the project objectives, and the resources needed to produce a complete Traffic Analysis Report that will be necessary during the next phase of the project development process. To meet the purpose of the PSR-PDS, this *assessment* should rely upon an evaluation and macro-level analysis of readily available information and data.

Summarize key findings, recommendations and the (performance, scope and resource) estimates produced or derived from the Preliminary Traffic Engineering Performance Assessment (see Chapter 5, Article 5 of this appendix), especially those which:

a) Support the "Purpose and Need" statements in Section 3

b) Demonstrate and quantify the "Deficiencies" outlined in Section 4

c) Identify the design features and traffic "infrastructure" (i.e. traffic control, operational, safety and management systems, elements, devices and strategies) to be included in the preliminary project scope of work

d) Identify the scope and magnitude of the formal Traffic Engineering studies (including operational, capacity, safety, warrant, and benefit/cost analysis) that will be necessary during the next phase of the project development process in order to:
   - Obtain "Project Approval"
   - Produce the Environmental Document
   - Identify / confirm the complete scope of work (i.e. infrastructure and strategies)

Items c and d facilitate the estimation of the capital cost, right of way requirements, and the traffic engineering resources required to perform the various traffic studies and analysis that is needed to produce a complete scope of work and support major design decisions (e.g. the safety analysis that can justify deviations from design and traffic standards.

5. Deficiencies

This section provides a concise discussion of the data that supports the purpose and need of the project as well as identifying existing available data that is important to the scoping of the project.

This section should refer to attached maps, charts, tables, letters, etc. When appropriate, discuss existing and forecasted traffic, level of service, capacity adequacy, and safety data from existing data.

This section may have two subsections. A subsection on the primary deficiencies would discuss deficiencies that relate directly to the need and purpose statements. A subsection on

the secondary deficiencies would identify other deficiencies that should be addressed when scoping the project, but are not related directly to the stated purpose and need for the project.

6. Corridor and System Coordination

This section should address the coordination and consistency of the proposed purpose and need with statewide, regional, and local planning efforts such as:

- District System Management Plan (DSMP).
- Transportation Concept Reports/Route Concept Reports.
- Corridor System Management Plan (CSMP)
- Regional Transportation Plans (RTP).
- Congestion Management Program (CMP).
- State Implementation Plan (SIP).
- Bicycle and pedestrian master plans.
- Short and Long Range Transit Plans
- Local Measure Programs
- Complete Streets
- Context Sensitive Solutions
- General Plan and Circulation Elements

Provide a summary of the information from the Transportation Planning Scoping Information Sheet which also includes Complete Streets and Context Sensitive Solutions to address other State Highway improvements, local improvements or any development projects within the immediate project vicinity.

Identify the date that the route was adopted, the CTC designation of the route or route denominations, and identify any applicable freeway or controlled access agreements, potential freeway or controlled access agreements, and potential relinquishments.

A project that requires a new public road connection must provide a description of the land-use development to be served by the new connection, describe the relationship to the local agency's general plan or other specific area plans, and justification per Chapter 27 of this manual that existing interchanges or local road systems cannot be improved to handle the deficiencies.

7. Alternatives

All alternatives that address the purpose and need will be carried forward to PA&ED as described in Chapter 9. A "No Build" alternative should always be considered.

Alternative discussions can refer to attachments which may include: schematic maps of the study area and typical cross-sections, as appropriate.

The alternative section includes a discussion of the design scope, describes the boundary of the study area, and defines the activities for the PA&ED phase for each of the alternatives.

As appropriate, consider the following topics for each alternative:

- Discuss the design scope in terms of how it will satisfy the project purpose and need.

- Describes the boundaries of the study area required for formal investigations during the PA&ED phase. The project study area for each alternative must be established to include reasonable modification to the alternative. Improper identification of the project study area can result in unanticipated studies and project delays.

- Identify the resources needed to complete the engineering, environmental, and right of way studies for all alternatives to achieve PA&ED. Summarize the information for the right of way needs and preliminary environmental assessment report.

- Discuss which studies and actions are required for approval of each alternative (e.g., FHWA, CTC route matters, etc.). For further guidance on approvals and agreements see "PDPM, Chapters 12 and 13."

- Discuss whether the alternative will require approval of design exceptions. If a project alternative requires a design exception approval during the PA&ED phase, discuss potential design exceptions in the PSR-PDS. A listing of the anticipated design standards that may likely be deviated from is required. Detailed draft design fact sheets are not required at this stage in the process. For further guidance of design exceptions requirements for a PSR-PDS see Chapter 9, Article 4- Essential Procedures.

- Discuss the estimated order of magnitude of capital cost of each alternative. The capital costs are for long-range planning. The capital costs should be presented as a range and are not to be used for programming.

- Discuss Stormwater BMPs that could affect the estimated project costs for each alternative. Also discuss potential water quality impacts that would entail additional resource needs during PA&ED.

- Discuss Context Sensitive Solutions or Complete Streets that could affect the estimated resources and PA&ED delivery milestone dates.

- Briefly discuss any constructability issues or concerns for example full closure and staged construction (refer to Traffic Engineering Performance Assessment, Chapter 5, Article 5 of this appendix).

8. Right of Way

Summarize the anticipated right of way, utilities, and railroad impacts for each alternative using the Conceptual Cost Estimate Request – Right of Way Component found in Chapter 5, Article 7 of this Appendix. Preliminary estimate mapping showing the property boundaries and project limits will help to estimate the number, area, and magnitude of parcels required for acquisition and the likely number of easements needed. The level of study is intended to develop an order of magnitude cost estimate for potential right of way needs to identify additional studies that may be needed during PA&ED.

Utilities

Identify existing utilities and potential relocation activities using existing, available information (e.g. permit search, as-built drawings, field review). The level of study is intended to develop an order of magnitude cost estimate and to identify additional studies that may be needed during PA&ED. (Pot holing is not part of PID scope.)

Railroad

Identify rail lines in the vicinity of the project and indicate possible impacts.

9. Stakeholder Involvement

Discuss the types of stakeholder involvement activities that were used to develop the purpose and need statement, and to identify the alternatives to be studied. Discuss stakeholder concerns and objectives that were identified during the PID phase.

Discuss the CSS approach that will be used to obtain stakeholder involvement in the identification and evaluation of alternatives.

10. Environmental Determination/Documentation

Summarize information provided in the PEAR. The PEAR includes a section titled "Summary Statement for PSR or PSR-PDS" which can be directly incorporated into the PSR-PDS. Refer to the Standard Environmental Reference (*SER*) for further guidance on the PEAR. The PEAR is completed and both summarized in the PSR-PDS and attach to the PSR-PDS.

11. Funding

Capital Estimate

Identify potential or proposed sources of funding and project funding eligibility (e.g., "Federal aid eligible") to fully fund the project. Examples of funding sources are a specific local entity, STIP program, or "future county shares." If necessary, expand the table to allow for multiple funding sources.

Fill out the funding tables that are found in Chapter 6 of this appendix for the PSR-PDS for STIP and projects funded by others or Long Lead SHOPP Projects. The capital cost estimates are ranges and are not to be used for programming. The order of magnitude estimates are used to estimate future funding needs. The breadth of the cost range is project specific. The estimate should be based on the worst and best-case scenario for high risk factors. For a PSR-PDS prepared by others, the local agency may desire a more comprehensive capital cost estimate.

Capital Support Estimate

Estimate the support costs that will be needed to complete PA&ED. Identify sources(s) of funding to fund the PA&ED phase of the project.

If federal dollars are used on any portion of the project and local agency support costs are considered a "soft" match for federal reimbursement, identify and discuss the local agency support cost.

Complete the Capital Support estimate for STIP, projects funded by others, and Long Lead SHOPP projects.

12. Schedule

Provide a delivery schedule for significant PA&ED milestones and major milestones for future project phases. For practical purposes this schedule shows the amount of time needed to complete the project. At a minimum, provide a tentative delivery schedule for milestones that are designated as Headquarters Mandatory (HQM) milestones in Guide to Project Delivery Workplan Standards (WSG).

Discuss all schedule constraints and assumptions for programmed milestones. A tentative schedule is not complete without documentation of the assumptions and constraints. The assumptions and constraints provide decision-makers with the rationale used to develop the schedule and the factors that could have significant impact on the schedule. The assumptions and constraints provide stakeholders with an understanding of critical delivery areas. For STIP, projects funded by others, and Long Lead SHOPP projects, the schedule, the resource needs, and estimate must be consistent with the workplan that is submitted to HQ Program Project Management.

Fill in the month and year for proposed program delivery milestones for PA&ED. Any milestones that are not proposed for programming and are outside of the programming cycle should be identified by fiscal year in the "Delivery Date Column" and a notation made that these dates are for "planning purposes only." For projects funded by others, local agency should provide critical target dates. The schedule shall be tied to a workplan to assist Caltrans in managing resources for these projects.

13. FHWA Coordination

Discuss coordination with FHWA.

If either federal action or the use of federal funds is anticipated, include the following language:

This Report has been reviewed by (*Name and title of the FHWA Liaison Engineer*) reviewing on (*date*). Per (*latest federal Transportation Act)*, this project is eligible for federal-aid funding and is considered to be (*STATE-AUTHORIZED or FULL-OVERSIGHT*) under current FHWA-Caltrans Stewardship Agreements. (*If either no federal-aid funding will be used or no FHWA approval required, delete the above statement and replace with the statement: "No federal-aid funding anticipated or no FHWA action required for this project.").*

Discuss whether or not the project is eligible for funding from the federal Congestion Mitigation and Air Quality (CMAQ) Improvement Program. Consult the *FHWA's CMAQ Program Guidance, April 1999*, at the Caltrans website: http://www.dot.ca.gov/hq/transprog/federal/cmaq/cmaq_final_guidance_under_safetealu_1008.pdf to determine if a project specific emission analysis needs to be made to quality for CMAQ funding.

If Interstate access is being added or modified, the process to request FHWA approval is deferred to PA&ED.

- For a PSR-PDS, a FHWA "engineering and operational acceptability" must be obtained early in the PA&ED phase prior to circulation of draft environmental document with an

unsigned supplemental PSR or an unsigned draft Project Report. FHWA "approval" will be given after the NEPA process is completed.

- For a PSR-PDS, include a statement that sufficient funding is expected to be reasonably available at the time of the circulation and/or approval of the environmental determination/document to allow for the inclusion of the fully funded preferred alternative in the financially constrained Metropolitan Planning Organization (MPO) or Regional Transportation Planning Agency (RTPA), Regional Transportation Plan (RTP) and Federal Transportation Improvement Program (FTIP). State the source of the funding (e.g., future county shares).

14. District Contacts

Give name and phone number of district representative to be contacted concerning questions on the PSR-PDS submittal.

15. Project Reviews

Include the completion date of major reviews. The templates include a list of suggested reviews. Each district should modify the template to reflect the district's review procedures.

16. Attachments

The following list provides examples of the appropriate attachments and files. Each project should be evaluated as to the appropriate inclusion of specific reports and information. Do not include raw data that is used in the analysis in the report or as an attachment. This information should be part of the project file and kept to support engineering recommendations.

Required Attachments:

- Location and/or vicinity map
- Schematic maps of the study area or alternatives
- Cost Estimate
- Typical Cross Sections
- SHOPP Performance Outputs (Only required for Long Lead SHOPP Projects)
- Preliminary Environmental Analysis Report (PEAR)
- Transportation Planning Scoping Information Sheet
- Right of Way Conceptual Cost Estimate Component
- Risk Register

Required Supplemental Documents for Project Files: (This information should only be summarized in the PSR-PDS)

- Quality Management Plan For Locally Implemented Projects on the State Highway System
- Storm Water Documentation
- PSR-PDS Survey Needs Questionnaire
- Traffic Engineering Performance Assessment
- Division of Engineering Services PSR-PDS Scoping Checklist
- For STIP projects, include a Project Nomination Fact Sheet as described in the STIP Guidelines as an attachment. Template for this Fact Sheet may be found at: http://www.dot.ca.gov/hq/transprog/ocip/2010stipdev.htm.
- Design Scoping Index or Equivalent Document
- Rosters of personnel participating in major reviews
- Project Support Cost Estimate

CHAPTER 4 – PSR-PDS Cost Estimates

ARTICLE 1

PSR-PDS Capital Cost Estimate

The level of detail available to develop the right of way and construction capital cost estimate for a PSR-PDS for the STIP, projects funded by others, or a long lead SHOPP project is only accurate to within orders of magnitude and is needed for long-range planning purposes only. Examples of ranges than can be considered are "less than $5M", "$5M-$25M," $25M-$75M" or "$50M-$60M." The breadth of range is based on available information and reasonable assumptions. Therefore, the capital costs provided in PSR-PDS are not for programming purposes. In addition, there should be a discussion of a financial plan that identifies existing non-STIP funding sources that are being considered to complete the project.

Capital Outlay Estimate

	Range for Total Cost		**STIP Funds**		**Other Funding Source(s)**	
	Construction	**Right of Way**	**Construction**	**Right of Way**	**Construction**	**Right of Way**
Alternative 1						
Alternative 2						
Alternative 3						
Alternative 4						

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital costs should not be used to program or commit State-programmed capital funds. The Project Report will serve as the appropriate document from which the remaining support and capital components of the project will be programmed.

The intent of the table is to provide the following information:

- The cost range for each alternative,
- A list of the main funding sources for each alternative (i.e., RIP, IIP, TRCP)
- SHOPP (Long Lead SHOPP projects)
- Other potential sources of funds (e.g., measure funds, developer funds).

Columns may be added to the table for each non-STIP funding source. A description of any specific funding commitment or constraint should be included in text following the table, for example, if a city may be willing to contribute up to a fixed amount for sidewalk improvements. The city's participation must be discussed. Discuss any cooperative agreements that may be needed for various project components. PSR-PDS estimate sheets are available at: http://www.dot.ca.gov/hq/oppd/design/psr-pds-estimate-sheets.pdf.

ARTICLE 2

PSR-PDS Support Cost Estimate

Estimate the support cost that will be needed to complete PA/ED. The support cost should be based on a resource-loaded workplan in either Expert Project Manager (XPM) or Project Resource and Schedule Management (PRSM).

If federal dollars are used on any portion of the project and local agency support costs are considered a "soft" match for federal reimbursement, identify and discuss the local agency support cost.

CHAPTER 5 – Scoping Tools

ARTICLE 1
General

This chapter contains some of the tools used by various functional areas to aid the project team in scoping the project. The tools not contained in this chapter can be obtained from the appropriate functional unit.

Upon receiving a request for project information, each functional unit completes the appropriate scoping tool and transmits the information to the unit responsible for developing the PSR-PDS.

ARTICLE 2

Project Initiation Document
Design Scoping Index

General Guidance

1. The Design Scoping Index (index) can serve as discussion document to help the design units analyze the highway system and identify geometric design issues that should be addressed during the project initiation phase.
2. The index can serve to facilitate discussions with other functional units to identify project issues and stakeholder input needed to properly scope the project.
3. The index can serve to facilitate discussions with Headquarter Liaisons to identify potential fatal flaws of non-standard design features.

The Design Scoping Index is used in conjunction with the scoping checklists from other functional units to determine feasibility of the project alternatives. When filling out the index, use some type of notation to indicate if information on the index is based on assumptions. Project information is dynamic and the information in this index should be revised and dated throughout the PSR-PDS process. As the project progresses, information should be verified, updated, and possibly addressed in a risk analysis.

To aid in engineering decision regarding the development of geometric plans, refer to the "*Highway Design Manual*" and DIB 78 Design Checklist.

The Design Scoping Index can be found in Appendix L.

ARTICLE 3

Stormwater Documentation

General Guidance:

The Office of Stormwater Management Design developed the Project Planning and Design Guide (PPDG) to provide guidance on the process and procedures for evaluating project scope and site conditions to determine the need for and feasibility of incorporating stormwater Best Management Practices (BMPs) into a project for compliance with the National Pollutant Discharge Elimination System (NPDES) permits. Within the PPDG, there is a standardized format to compile pertinent information necessary to evaluate potential stormwater impacts on a project called the Storm Water Data Report (SWDR). The SWDR has a narrative, multiple checklists and attachments that are used to document the stormwater decisions being made on a project, as well as compiling the necessary background information needed to make those decisions. A SWDR is required to be completed at each phase of a project. The intent of this process is to document background information and the stormwater decisions made for a project throughout each phase. So as a project proceeds, the SWDR from the previous phase will be used as the starting point so that efforts are not duplicated.

The level of detail in a PID-level SWDR should be commensurate with the level of detail in the PID document. Since the main purpose of the PSR-PDS is only to estimate the resources needed to complete PA&ED, the expected level of detail for a PSR-PDS SWDR is going to be much less than a regular Project Study Report SWDR. The PSR-PDS evaluation will mainly focus on determining if there will be any significant impacts to the project alternatives, right-of-way needs, or project costs due to the need to incorporate treatment BMPs for compliance with stormwater requirements. The Evaluation Documentation Form (PPDG, Appendix E) will be used to document the need to incorporate Treatment BMPs in a PSR-PDS.

The following topics would be considered to be the minimum information necessary to be able to provide an effective stormwater analysis during the PSR-PDS SWDR documentation process:

- List the Regional Water Quality Control Board(s) that are within the project limits.
- Will a 401 Certification be required?
- Are there any location specific requirements?
- Is there a potential for the project to create permanent water quality impacts?
- Determine the total estimated Disturbed Soil Area (nearest acre) for each project alternative.
- Will the project need coverage under the Construction General Permit (CGP)? If so, what is the estimated project Risk Level? (if required)
- Determine the estimated net new impervious area (nearest acre) for each project alternative.

- Will the project require the incorporation of Treatment BMPs? (complete the Evaluation Documentation Form)

- If treatment BMPs will be required, describe the considered Permanent BMPs and any additional right of way needs.

- Will steep slopes be created or disturbed? If so, describe any advanced erosion control needs.

- Is the project going to require a notification of Aerial Deposited Lead (ADL) reuse?

- What are the estimated costs for both permanent and temporary BMPs?

It should be noted that while the SWDR has a number of checklists and attachments, it is understood that much of the information will be gathered and/or determined during the PA&ED. To eliminate the potential of expending resources to gather information that may not be required, the Project Engineer should coordinate with the District/Regional Design Stormwater Coordinator during the Pre-PID meeting to come to an agreement of the expected level of documentation and to have a better understanding of the potential stormwater impacts within the project area. During this consultation, it will also be determined if additional information other than the topics listed above is warranted.

Pertinent information from the SWDR should be summarized within a stormwater section in the PSR-PDS PID.

During PA&ED, the normal stormwater documentation process will be followed.

For Statewide consistency, the template for a PSR-PDS SWDR will be similar to regular PID-level SWDR and will be located on the Office of Stormwater Management – Design website at: http://www.dot.ca.gov/hq/env/stormwater/

ARTICLE 4

Transportation Planning Scoping Information Sheet

General Guidance:

The Project Development Team (PDT) should use the Transportation Planning Scoping Information Sheet to verify that the project remains consistent with the planning level purpose and need and is consistent with planning concepts, statewide goals, and planning decisions.

The majority of the data requested for the information sheet is compiled at two separate time periods. The initial information is collected by the Transportation Planning PDT representative at the start of PID development to ensure appropriate stakeholders are included in the process and all pre-planning efforts and commitments are reviewed before any project decisions are made. Explanations of how the requirements were met will need to be finalized by the end of the PID.

The Transportation Planning Information Sheet can be found in Appendix L. Guidance to assist in completing the Information Sheet is located on the OPPC website located at: http://www.dot.ca.gov/hq/tpp/offices/oppc/project_scoping.html

ARTICLE 5

Traffic Engineering Performance Assessment

General Guidance:

Project-related traffic engineering studies produce findings and estimates related to the operational and safety performance of existing and proposed highway infrastructure. The performance related findings and estimates are derived from the:

- Analysis of traffic, collision and performance data *and forecasted* traffic volumes
- Evaluation of existing infrastructure to identify deficiencies and/or omissions
- Evaluation of the proposed infrastructure, including geometric design and traffic features or elements (i.e. traffic control, operational, management and safety devices, systems and features).

Performance-related findings and estimates provide the basis for project scoping and design decisions. Ultimately, formal traffic engineering studies inform and advise the PDT as to whether the project scope is complete, and whether the scope will meet the project "purpose and need."

To meet the purpose of the PSR-PDS, the preliminary traffic engineering studies should be limited to an *assessment* of readily available information and data, and macro-level analysis and evaluation. This effort will produce preliminary traffic engineering findings and estimates to inform and advise the PDT on:

1. The potential scope of work and features (especially the traffic "elements" referenced above)
2. Potential performance benefits and deficiencies
3. The scope and magnitude of traffic engineering work (traffic forecasting, modeling, analysis and evaluation) to be performed during the Project Approval and Environmental Document phase

The traffic engineering effort performed during PA & ED will further define the scope of work and produce reliable estimates of the operational and safety impacts (benefits and dis-benefits) of the proposed highway infrastructure.

The information, questions, checklists and report template provided below are intended to guide and advise the engineer and/or traffic analyst who is responsible for the performance and documentation of the traffic engineering assessment.

A summary of the assessment and key findings and estimates should be summarized or incorporated into the PSR-PDS document.

Traffic Engineering Performance Assessment

General Guidance:

A. Objectives/Requirements

The responsible-charge engineer shall consult with the Functional Managers identified below in order to estimate the scope and magnitude of the Traffic Engineering studies (i.e. Travel Forecasting; Traffic Analysis; Infrastructure Evaluation; Warrant Analysis; and, Safety Review) that need to be performed during the Project Approval & Environmental Document phase.

These "studies" produce estimates of the operational and safety performance of:

- The proposed "base design" (i.e. plans for new, modified or reconstructed infrastructure)
- Specific traffic elements, devices, features and systems that may cost-effectively enhance performance; or (when added to the scope) will prevent the emergence of a safety / operational performance problem (i.e. hot spots)

These performance estimates are ultimately used to:

- Demonstrate if, and quantify how the proposed investment will meet the project Purpose and Need statement
- Produce a complete scope of work by identifying the need and value (Benefit / Cost) for including key traffic control, safety, operational, and management systems, features and devices
- Support critical engineering decisions (e.g. decisions to create or retain a nonstandard geometric design feature)

FUNCTIONAL MANAGERS (Print names; signature not required)

Division of Planning:

Travel / Traffic Forecasting Manager _____(Print Name)_____ Date ____

Division of Traffic Operations

Freeway or Highway Operations Engineer _____ Date ____
Traffic Electrical (ITS) Engineer _____ Date ____
Traffic Safety Engineer ***** _____ Date ____

Two consultation meetings are recommended:

1. With Travel Forecasting Manager and the appropriate District Operations Engineer
2. With the District Operations, Electrical (ITS) and Traffic Safety Engineers*****

* Note: The District Traffic Safety Engineer will provide the required written assessment of performance data, infrastructure and operating conditions. This assessment will identify, or be used to identify the scope and magnitude of the formal safety analysis, which will be a component of the eventual Traffic Analysis (Report).

B. Overview:

Project-related traffic engineering studies produce findings and estimates related to the operational and safety performance of existing and proposed highway infrastructure. These performances related findings and estimates are derived from the:

- Analysis of traffic, collision and performance data *and forecasted* traffic volumes
- Evaluation of existing infrastructure to identify deficiencies and/or omissions
- Evaluation of the proposed infrastructure, including geometric design and traffic features or elements (i.e. traffic control, operational, management and safety devices, systems and features).

Performance-related findings and estimates provide the basis for project scoping and design decisions. Ultimately, formal traffic engineering studies inform and advise the PDT as to whether the project scope is complete, and whether the scope will meet the project "purpose and need."

To meet the purpose of the PSR-PDS, the preliminary traffic engineering studies should be limited to an *assessment* of readily available information and data, and macro-level analysis and evaluation. This effort will produce preliminary traffic engineering findings and estimates to inform and advise the PDT on:

- The potential scope of work and features (especially the traffic "elements" referenced above)
- Potential performance benefits and deficiencies
- The scope and magnitude of traffic engineering work (traffic forecasting, modeling, analysis and evaluation) to be performed during the Project Approval and Environmental Document phase

The traffic engineering effort performed during PA & ED will further define the scope of work and produce reliable estimates of the operational and safety impacts (benefits and dis-benefits) of the proposed highway infrastructure.

The information, questions, checklists and report template provided below are intended to guide and advise the engineer and/or traffic analyst who is responsible for the performance and documentation of the traffic engineering assessment.

A summary of the assessment and key findings and estimates should be summarized or incorporated into the PSR-PDS document (see Section F).

C. General Approach & Objective

At the PSR-PDS PID stage, the traffic forecasting activities and tasks should utilize readily available information and traffic models. At this stage of the project development process, it is not intended that effort be devoted to the generation of traffic data and to updating of traffic models. The intent is to utilize existing data, transportation reports, and performance monitoring systems describe and identify in the following sections a general description of the existing traffic and forecasted traffic. Consult with the District Local Development-Intergovernmental Review Planner for applicable local agency studies of land development proposals.

A macro-level analysis or assessment of the infrastructure, operating conditions, and traffic volume, collision and performance data should produce an estimate of performance impacts (benefits and disbenefits) on the subject highway segment, corridor or system.

The primary objective is to identify the traffic forecasting and traffic engineering studies needed to analyze, evaluate, and more accurately predict or estimate operational and safety performance of the proposed improvements. This is necessary for the preparation of the environmental

determination/document; and to ensure that a complete project scope is considered and identified during the project approval phase.

D. The Project Approval and Environmental Document (PA&ED) Traffic Engineering Study

Objectives:

Ultimately, traffic forecasting and traffic analysis identifies operational and safety performance deficiencies and impacts (needs), and a reliable estimate of how the improved highway infrastructure will perform. This allows for a determination as to whether the scope is adequate, whether the project "purpose and need" will be met, and the cost-effectiveness of the investment. Specifically, the function of the formal traffic study is to:

1. Identify performance deficiencies - both existing and potential - based on the review, evaluation and analysis of:
   - Infrastructure (current and proposed)
   - Operating conditions
   - Traffic, collision and performance data

2. Predict and/or estimate the operational and safety performance of proposed highway geometric designs (for new infrastructure)

3. Predict and/or estimate the operational and safety performance impacts (i.e. benefits and disbenefits) of specific modifications to existing highway infrastructure or a base design; for example:
   - The performance of an intersection should improve when a left turn lane is added to the base design
   - The performance of a freeway entrance ramp merging operation during periods of heavy demand should improve when metering is employed

4. Quantify the impact (benefits and disbenefits) of proposed infrastructure reconstruction, expansion, modification, etc. on the operational and safety performance of a highway segment, corridor or system

Content:

A formal traffic engineering study requires and/or is comprised of the following major components:

- Traffic Forecasting / Modeling
- Traffic Analysis
  - Operational Analysis (includes capacity analysis)
  - Safety Analysis

- Evaluation of highway infrastructure and operating conditions (e.g. the impact of queuing and unstable flow on adjacent segments, traffic movements, access points and safety)

E. Screening

To help estimate the scope and magnitude of the (future) traffic engineering study, the project engineer responsible for the PSR-PDS and key Functional Managers should jointly review the following "checklists" to discuss /decide their applicability to the specific PSR-PDS.

1. Forecasting / Modeling Requirements, Considerations and Assumptions

- Use Local Model?
- Update Model
- New Model
- Existing Traffic Counts
- New Traffic Counts
- Historical Growth
- General Plan (GP) Buildout
- Pro-Rate GP Growth
- Existing Year ( )
- Design Year ( )
- Interim Year ( )

2. Preliminary Scope of Work (Traffic Elements / Features / Systems / Plans)

Based on a review and evaluation of performance data, and the existing and future infrastructure and operating conditions, the project engineer and appropriate functional managers should meet to review the following list of traffic operational, control, management and safety systems, devices, features and strategies (i.e. *traffic elements*).

The preliminary scope of work should reflect the need to include ***traffic elements*** as they relate to the Purpose & Need, or compliance with traffic engineering policy or system performance requirements.

The preliminary list of ***traffic elements*** will facilitate the development of a ballpark estimate for construction, right of way, and Maintenance & Operation costs. More importantly, the preliminary list will identify ***elements*** for which traffic analysis or some other traffic engineering support activity is required to determine the engineering need for their inclusion in the scope based on *warrant* analysis, *benefit/cost* analysis, and *safety* analysis.

a. Major Traffic Control Devices

- Overhead sign structures
- Changeable Message Signs (especially overhead)
- Sign Gantries (for Active Traffic Management)

b. Operational Features / Treatments / Systems

- Auxiliary Lanes
  - Channelization lanes
  - Speed change lanes
- Acceleration lanes
- Deceleration lanes
- Slow moving vehicle lanes
- Ramp "braiding"

- Median and Traffic Islands / Channelizers
- Intersection Control Strategies / Systems
  - Yield Control / roundabouts
  - Signalization
  - All Way Stop Control
  - Pedestrian Crossing Devices / Systems

c. Traffic Management Strategies and Systems

- Managed Lanes (Express or HOV lanes)
- Ramp Metering Systems
- Changeable Message Signs
- Detection Systems
- Communication Networks / Hardware
- Highway Advisory Radio
- Closed-Circuit TV cameras
- Park & Ride Lots

d. Safety Systems / Devices / Strategies

- Roadside / Roadway Departure Systems and Treatments
  - Median Barrier Systems
  - Guardrail Systems
  - Clear Zone Enhancements (e.g. slope flattening, tree removal, etc)
- Glare Screen
- Lighting
- Truck Escape Ramps
- Fencing
- Intersection Traffic Control Systems
  - Roundabouts (yield control)
  - Signalization
  - All Way Stop Control
  - Beacons
- Real-Time (Intelligent) Warning Sign Systems
- Left-turn and right-turn channelization
- Acceleration and Deceleration Lane extensions (via auxiliary lanes)
- Pavement Surface Treatments (OGAC, grooving, etc.)
- Drainage System Enhancements
- Severe Weather Detection & Warning Systems for Ice /Fog / Wind

e. Transportation Management Planning (related to construction phase)

- Construction Staging
- Full Closure (review Checklist or consult with Dist Traffic Manager)
- Strategies (analysis needed to determine which to employ)

f. EXAMPLES: (how to use checklist to identify scope of work and Traffic Analysis):

- The decision to provide a freeway auxiliary lane to extend the acceleration lane and improve the ability of drivers to find a suitable gap into which they can merge shall

be based on Traffic Analysis findings related to the operational and safety benefits during peak periods and peak "shoulders." The analysis shall consider the density of mainline lanes, the percentage of trucks, ramp volumes, the presence of ramp metering and if it can be effectively operated during peak periods, etc. Therefore, this type of Traffic Analysis needs to be planned for project proposals which intend to add a new interchange, expand the capacity of an existing interchange, or simply allow more vehicles to enter the mainline during critical periods of operation.

- Similarly, Traffic Analysis must be planned to determine the need for, and selection of the optimum form of intersection traffic control at each new or affected interchange ramp termini. In most cases: the interchange configuration, the width of overcrossing or undercrossing structures, and right of way requirements will be based directly on the form of intersection control and the cross-section of approach roadways. Therefore, the Traffic Analysis performed to support the selection of a traffic signal or a roundabout (yield control) will have a significant impact on the scope, cost, right of way, and environmental impacts.

- RE: Freeway widening proposals -- The need for, and selection of the treatment to mitigate the affect of headlight glare on the operational and safety performance of drivers during the hours of darkness will be based on Traffic Analysis findings regarding impacts and benefits produced by the installation of glare screen or lighting (especially through horizontal curves at which Stopping Sight Distance can be impacted by the installation of glare screen)

3. Traffic Analysis

The following list identifies specific performance measures, infrastructure components (operational, safety and management features, systems and devices), traffic movements, conflicts, etc. for which Traffic Analysis is typically performed or required.

Most traffic analysis relates directly to the operational and safety performance of access points and highway segments that are directly affected by the location, spacing and type of access opening. The capacity and performance of any highway corridor is affected and often limited by the capacity of access points, such as: conventional at-grade intersections, freeway merges and diverges, HOV lane access openings, and the weaving that occurs between adjacent access points.

a. Operational & Capacity Analysis

- Mainline LOS (capacity analysis)
- Ramp Merge and Diverge LOS
- Weaving analysis
- Ramp terminal intersection LOS
    - Exit Ramp storage / queue analysis
- Interchange / Local System network analysis
- Ramp Metering System analysis
    - Interchange specific
    - Corridor-wide
- Managed Lane (HOV Lanes, Express Lanes, Transit Only Lanes, etc.) analysis
- Intersection Control Alternatives Analysis

  - Signal warrant analysis
  - Yield Control / Roundabout performance analysis
  - All-Way Stop Control
- Conventional Intersection Analysis
  - Capacity analysis (to determine number of through lanes and channelization)
  - Delay studies
  - Queuing and channelization storage analysis
  - Network analysis

b. Safety Study / Analysis

Based on a review and assessment of collision data, rates, trends and safety performance management and monitoring reports; and an evaluation of existing and proposed (future) infrastructure and operating conditions (and other relevant technical data and information), the District Safety Engineer will estimate the scope and magnitude of the formal (future) safety study / analysis.

This assessment will quantify the safety "need" within the highway segment or corridor, upon which a specific form of engineering analysis and evaluation will be recommended and estimated (e.g. Safety Audit, Safety Analysis and/or Safety Review).

- The future safety study will be performed by, or under the direction of the District Traffic Safety Engineer.
- Safety Analysis shall be focused on the evaluation of off-peak and "shoulders" of the peak period when speeds are highest and environmental factors (darkness and glare) affect driver performance.

c. Other Analysis

- Project & Construction Staging (mostly during design phase)
- Traffic Management Planning
  - Lane Closures
  - Full Closure Traffic Studies (consult with District Traffic Manager)
- Special Truck Studies

F. TEMPLATE - Documentation of the Traffic Engineering Performance Assessment

PROJECT PROPOSAL IDENTIFICATION (required if this document will **not** be attached to PSR-PDS)

1. District – County –Route – Limits:
2. Facility Type:
3. Project Type (new facility, increase capacity, increase access, expand access, congestion management, safety):
4. Targeted System User (motor vehicles, transit, bicyclists, pedestrians):
5. Key Transportation Agencies (MPO, RTPA, County, Cities):
6. Context (rural, urban, suburban):
7. Project Manager:

SUMMARY OF PRELIMINARY FINDINGS & RECOMMENDATIONS

Assessment Approach, Data Sources & Major Assumptions

- Forecasted Traffic Volumes & Conditions
- Modeling Tools / Methodologies
- Traffic Analysis
  - Operational / Capacity
  - Safety

Preliminary Assessment Findings (regarding operational and safety performance)

- Operational Deficiencies
- Infrastructure Deficiencies
- Infrastructure Omissions
- Assessment of Safety Performance / Needs
- Project Scope: Recommended or Required Features, Systems, Devices
  - Operational Features
  - Safety Systems
  - Traffic Control Systems
- Traffic Management Systems

Include a general description of the operational performance deficiencies and needs for which operational features should be required (e.g. auxiliary lanes, overhead signs, intersection control strategies etc.). Also discuss traffic management systems and elements (e.g. ramp metering, CMS, HOV lanes, etc.) to be incorporated. Discuss any strategies or components of the traffic management system that may be controversial during development of the environmental determination/document (e.g. the addition of tolling to an existing HOV lane).

SCOPE OF FUTURE TRAFFIC ENGINEERING STUDIES, ACTIVITIES, AND TASKS (based on "Findings"):

- Forecasting
- Operational / Capacity Analysis & Evaluation
- Safety Analysis & Evaluation
- Electrical Systems (type, service, hardware, software)
- Traffic Management Planning (for work zone)

ARTICLE 6

Preliminary Environmental Analysis Report

General Guidance:

The Preliminary Environmental Analysis Report (PEAR) provides the initial environmental evaluation of a project and alternatives before it is programmed. It anticipates the environmental constraints that may affect project design, alternatives, cost, schedule, and delivery. It estimates the scope, schedule, and costs associated with the subsequent environmental compliance process and it documents the assumptions and risks used to develop those estimates. When a PEAR is required, it becomes an attachment to the Project Initiation Document (PID).

As the PSR-PDS only estimates costs through PA&ED, the PEAR for a PSR-PDS should only estimate costs through PA&ED; a PSR-PDS, including the PEAR subcomponent, cannot be used to program capital expenses for subsequent phases. The cost of environmental permits and commitments is a capital expense and is programmed along with ROW and construction costs and therefore should not be included in a PEAR for a PSR-PDS.

The level of detail in a PEAR should be commensurate with the level of detail in the PID document. The PEAR should be a concise (approximately 5 to 15 pages) report used to document the issues that are anticipated to be addressed in the NEPA or CEQA documentation and the assumptions that were used to anticipate those issues. The magnitude and complexity of the proposed project dictates the level of effort expended for the PEAR documentation, nevertheless, the PEAR is not an environmental document; it is not the equivalent of the Tier 1 NEPA document; and it is not a report of environmental analysis.

The 2009 revisions to the PEAR Handbook included a new discussion on level of effort as well as risks and assumptions. The level of effort discussion was added to provide more guidance on the types of projects that may be considered at higher risk for project delays due to environmental concerns and therefore require a higher level of effort for the PEAR.

The PEAR Handbook makes it clear that a PEAR should always include documentation of any assumptions that were made and/or any environmental risks, particular those assumptions and risks that could affect the cost, scope, and schedule of the project.

The PEAR Handbook, PEAR template, and templates for the PEAR attachments can be found at the following page: http://www.dot.ca.gov/ser/pear.htm

ARTICLE 7

Conceptual Cost Estimate
Right of Way Component

General Guidance:

The Conceptual Cost Estimate for the Right of Way Component provides an order-of-magnitude estimate that is intended for planning purposes only. The Right of Way Component of the project should not be programmed until a Right of Way Data Sheet has been completed and approved.

The project engineer completes the Conceptual Cost Estimate Request – Right of Way Component and submits it to the district Right of Way division. The district Right of Way division will then complete the Conceptual Cost Estimate – Right of Way Components and submit it to the project engineer.

CONCEPTUAL COST ESTIMATE REQUEST RIGHT OF WAY COMPONENT

The purpose of this request to the District Right of Way Office is to provide the necessary project information to complete a detailed work plan for the Right of Way resource needs of the Permits and Studies component of the project as well as an order of magnitude estimate. Conceptual maps should be attached consisting of schematic plans or aerial photography with the project study area marked. The request should be entirely completed with the best information available. The basis of the estimate will consist of the information on the request and maps.

Project Information

Identify the type of project with a description that describes the change between the current right of way and the future footprint.

Other pertinent information about the project includes:

- Anticipated project schedule- *The milestone dates will provide a time basis for the estimate.*
- Project setting- *Choose urban or rural and keep land use simple i.e. residential, agricultural, commercial.*
- Alternatives to be studied – *Quantity of alternatives but do not include a 'No Build' alternative.*
- Type of environmental document – *Such as EIR, FONSI, Categorical Exclusion.*
- Environmental mitigation – *Environmental mitigation parcels or credits only.*
- Project permits needed – *Total quantity of permits needed. Do not include permits for construction.*
- Rights of entry required – *Quantity of Permits to Enter required for studies.*
- Public meetings – *Quantity of public meetings be held with R/W participation.*
- Project is expected to be controversial – *Check 'Yes' if any opposition to the project is expected.*

Right of Way Requirements

The Right of Way requirements determine the scope of the right of way involvement on the project. The information needed to complete the estimate includes:

- Number of Parcels/Total additional area – *Quantity of required parcels and areas of new property.*
- Number of Easements/Total Easement area – *Include temporary and permanent easements.*
- Access Points/Control – *Any change in access must be identified in sufficient detail to determine the effects on the properties impacted.*
- Utilities – Major utilities would include substations, towers, canals, or similarly complex facilities.
- Potholes – Quantity of locations needed to pothole for identifying the placement of the utilities.
- Railroad – Identified all railroad owners in the vicinity of the project and probable involvements.
- Relinquishment/Vacations – Any Relinquishments or Vacations should be identified on existing or proposed facilities.

CONCEPTUAL COST ESTIMATE REQUEST – RIGHT OF WAY COMPONENT

To: _____ Date:
RIGHT OF WAY

Dist-Co-Rte-PM
ATTN:_____ Project ID
EA

From: _____

The above-referenced project will require a(n) Original/Updated Conceptual Cost Estimate for the Right of Way Component by _____(date).

Project Information

Type and description of the project.

Project Setting: ☐ Urban ☐ Rural Current Land Use:_____

Project Schedule: PID Date_____ PA&ED Date_____ RWC Date_____

Number of Alternatives to be Studied_____ Environmental Document Type_____

Environment Mitigation Parcels/Credits Anticipated: ☐ Yes ☐ No ☐ Unknown

Environmental Permits: Number_____ Permits Needed Prior to PA&ED_____

Permits to Enter for Environmental/Engineering Studies_____

Number of Public Meetings Anticipated_____ Controversial: ☐ Yes ☐ No ☐ Unknown

Right of Way Requirements

Additional R/W: Number of Parcels_____ Total Additional Area _____
Number of Easements_____ Total Easement Area_____

Access Points/Control: ☐ No Anticipated Change ☐ Change is Anticipated

Identify Change in Access:_____

Utilities: ☐ None ☐ Minor ☐ Major Types of Utility facilities:_____
☐ Potholing Needed Number_____

Railroad: Identify Rail Companies in the Vicinity of the Project:_____
List Possible RR Needs (e.g. 'Flagging'):_____
☐ No Rail Companies in the Vicinity of the Project

Existing Facilities: ☐ No Relinquishments/Vacations ☐ Relinquishments ☐ Vacations

Proposed Facilities: ☐ No Relinquishments ☐ Relinquishments

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

The Conceptual Cost Estimate for the Right of Way Component provides an order-of-magnitude estimate that is intended for planning purposes only. The Right of Way Component of the project should not be programmed until a Right of Way Data Sheet has been completed and approved. The Conceptual Cost Estimate for the Right of Way Component will include:

Scope of the Right of Way

- Field Review – *A visit to the field will reveal important location specific characteristics.*
- Right of Way Required – *Includes any deliverable required for the Right of Way component.*
- Number of Parcels – *Estimated quantity of parcels needed for the project.*
- Urban or Rural – *The setting of the project will be urban or rural as indicated on the request.*
- Land Area – *Total land area for fee and easement requirements.*
- RAP Displacements – *Determine if families or businesses will be displaced by the project.*
- Demolition and Clearance – *Determine if structures/improvements will need to be cleared.*
- Railroad Involvement – *Determine if railroad interests are involved.*
- Utility Involvement – *Determine if utilities are involved.*

Cost Estimates

- Capital Outlay Support Costs – *The support costs are represented as a range of values based on the scope of the right of way in the Right of Way component.*
- Capital Outlay Costs – *The capital costs are represented as a range of values based on the estimated capital costs related to parcels, utilities, and railroad involvement.*

Schedule

The schedule assumes a Right of Way Cert #1 from the Project Approval and Environmental Document (PA&ED) milestone.

Areas of Concern

The areas of concern identify areas in close proximity to the project that could result in major increases to the cost or schedule of delivering the Right of Way component if impacted.

Assumptions and Limiting Conditions

Provide the assumptions and limiting conditions used in the preparation of this estimate.

Contact

The preparer will include his or her name and telephone number.

CONCEPTUAL COST ESTIMATE – RIGHT OF WAY COMPONENT

To: Date

Dist-Co-Rte-PM
From: Project ID
EA
Project Description

A Field Review was conducted ____Yes ____No

Scope of the Right of Way

Provide a general description of the right of way including the location attributes.
Right of Way Required ____Yes ____No
Number of Parcels ____ 1-10 ____ 11-25 ____26-50 ____51-100 ____>100
____Urban ____Rural
Land Area: Fee_____ Easement_____
Displaced Persons/Businesses ____Yes ____No
Demolition/Clearance ____Yes ____No
Railroad Involvement ____Yes ____No
Utility Involvements ____Yes ____No ____Number of Utilities in area

Cost Estimates

Support Costs	____$0-$25,000	____$500,001-$1,000,000
	____$25,001-$100,000	____$1,000,001-$5,000,000
	____$100,001-$250,000	____$5,000,001-$10,000,000
	____$250,001-$500,000	____>$10,000,000
Capital Costs	____$0-$100,000	____$5,000,001-$15,000,000
	____$100,001-$500,000	____$15,000,001-$50,000,000
	____$500,001-$1,000,000	____$50,000,001-$100,000,000
	____$1,000,001-$5,000,000	____>$100,000,000

Schedule

Right of Way will require _____ months to deliver a Right of Way Certification #1 from Final R/W Maps. This estimate is based on a Right of Way Certification date of _____.

Areas of Concern
Provide a description of areas in close proximity to the project footprint that are likely to result in complex right of way issues if impacted (i.e. junkyards, cemeteries, utility towers, etc.).

Assumptions and Limiting Conditions
Provide a description of assumptions and limiting conditions.

ARTICLE 8

PSR-PDS Survey Needs Questionnaire

General Guidance:

The project datums, vertical and horizontal, need to be established as soon as possible in the schedule, and all other mapping adjusted to the project datums. Obsolete datums such as NAD27 and NGVD29 should not be used for new projects.

What Survey Control Datums will be used for project design and mapping?

Vertical Control

- ☐ NAVD 1988 (Preferred)
- ☐ NGVD 1929 (Alternative)
- ☐ Other (Must consult with Caltrans Surveys)

Horizontal Control

California Coordinate System of 1983

- ☐ Epoch _____
- ☐ Other than CCS83 (Must consult with Caltrans Surveys)

Will the project need a Sea Level Rise Risk Assessment?

Does the project adjoin the ocean or tidal waterways?

Is the existing highway protected by levees, sea walls, or rip-rap?

Will existing as-builts, centerlines, or base mapping require any datum or unit conversions?

Are the right of way record maps current?

Is there any need to accelerate design accuracy surveys for this project?

ARTICLE 9

Quality Management Plan

For Locally Implemented Projects on the State Highway System

General Guidance:

The purpose of the Quality Management Plan is to facilitate an effective and efficient process for the development, review and approval of PIDs for State Highway System (SHS) projects sponsored by others. The project sponsor and/or implementing agency must develop and follow a Quality Management Plan that meets the standards of professional practice and satisfies requirements of the project scope and schedule. The Project Managers from Caltrans and the Lead Agency shall ensure that all Project Development Team (PDT) members, including consultants, utilize the Quality Assurance/Quality Control (QA/QC) elements as described in this document during the production and review of PIDs. QA/QC will be performed before deliverables are submitted to Caltrans for review.

Each team member must understand the project objectives, apply sound engineering principles and is expected to produce quality, accurate, and complete documents within the project schedule and budget. Project documents will be prepared in accordance with current Caltrans regulations, policies, procedures, manuals, and standards including compliance with Federal Highway Administration (FHWA) requirements.

The information provided in the Quality Management Plan describes the quality procedures that will be implemented for work performed during all phases of development, review and approval of locally sponsored and/or implemented PIDs.

The Quality Management Plan template is to be modified to fit project needs, reporting relationships, and general circumstances.

Quality Management Plan

For Preparation of Project Initiation Documents for Locally Implemented Projects on the State Highway System

Date

EXAMPLE AGREEMENT COVER SHEET

Abstract: This section briefly addresses the quality assurance and quality control procedures that will be implemented for the development, review and approval of Project Initial Documents (PIDs) for Highway System Projects Sponsored and/or implemented by local and regional agencies and others.
.

QUALITY MANAGEMENT PLAN
FOR
(Project Name)

Approved by _____ _____
Name, Caltrans Project Manager Date

Approved by _____ _____
Lead Implementing Agency Date

_____
Name, Lead Agency Project Manager

Approved by _____ _____
Name, Consultant Project Manager Date

TABLE OF CONTENTS

EXHIBITS

Introduction

The purpose of the Quality Management Plan is to facilitate an effective and efficient process for the development, review and approval of Project Initial Documents (PIDs) for State Highway System (SHS) projects sponsored by others. The project sponsor and/or implementing agency must develop and follow a Quality Management Plan that meets the standards of professional practice and satisfies requirements of the project scope, cost, and schedule. The Project Managers from Caltrans and the Lead Agency shall ensure that all Project Development Team (PDT) members utilize the Quality Management Plan elements as described in this document during the production and review of PIDs. QA/QC will be performed before deliverables are presented to Caltrans for review. Each team member must understand the project objectives, apply sound engineering principles and is expected to produce quality, accurate, and complete documents within the project schedule and budget. Project documents will be prepared in accordance with current Caltrans regulations, policies, procedures, manuals, and standards including compliance with Federal Highway Administration (FHWA) requirements.

The following information describes the quality procedures that will be implemented for work performed during all phases of development, review and approval of locally implemented PIDs.

Quality Control Reviews

1. Quality Control (QC) Reviews shall be conducted for all deliverables. A project schedule shall be developed with the consensus of the PDT that identifies anticipated reports, submittal dates and review periods.
2. Prior to submission to Caltrans, each deliverable will be subject to review by senior staff and the Local Agency Project Manager.
3. Project documents will be reviewed for conformance with project design criteria, legibility, and completeness and compliance with regulatory and code requirements.
4. All QC comments will be evaluated by the lead author for the document, discussed with the QC reviewer as needed and, if appropriate, incorporated into the deliverable. The Local Agency and Caltrans Project Manager will review and approve the resolution of each comment.
5. The Project Quality Control Coversheet, as shown in Appendix B, shall be used to document all quality control reviews.

Checking of Calculations

Final report calculations associated with the conceptual alternatives, cost estimates, and traffic technical reports shall be checked for reasonableness. All calculations shall be reviewed by the Lead.

Checking of Drawings

Conceptual geometric plans figures, mapping, and preliminary bridge plans (if applicable) shall be checked in accordance with established standards (e.g. Highway Design Manual and local standards).

Quality Assurance

The Project Managers from Caltrans and the Lead Agency, along with its consultant(s) will be responsible for the development of deliverables and assure that the stated quality control procedures are being followed. A Quality Assurance Log that includes dates when documents were received reviewed, and

names of the QC reviewers shall be maintained for each report or work product.

Reporting Structure

An organization chart that describes the reporting structure and assigned staff that are involved in the QA/QC shall be developed at the beginning of the PID project.

QA/QC Duties and Responsibilities

Quality control begins with assigning the most appropriate person to each task. Each member of the team should be responsible for controlling the quality of the product, beginning with the project staff through to the Project Managers. The qualifications of the team members overseeing and doing the work should be identified. All team members should be in constant communication with the each other and their respective Principals and Project Managers in regards to project status, schedule, and any issues that might arise during the development of the PID.

The duties and responsibilities of each of the project members in coordinating and guiding the project efforts are described below:

a. **Principals-in-Charge (PICs)** – Responsible for allocation of resources and monitoring of the project to ensure adherence to the project objectives, schedule, budget, approvals, and ensuring that the QC/QA plan is in place and being implemented. Provides periodic audits of technical work and performance of respective staff.

b. **Caltrans Project Manager -** Responsible for Independent Quality Assurance as described in the Cooperative Agreement.

c. **Local Agency Project Managers** – Responsible for completion of project scope and tasks, and adherence to project schedule and budget, including QA/QC program. The Project Managers allocate resources to various elements of the work, establish and implement the Quality Management Plan, schedule the various activities and adjust plans as the work progresses to identify potential problem areas and resolve them in a timely manner. Responsible for technical review and approval of project documents before issuance to the reviewing agency; certifies that each submittal has been prepared and checked in accordance with Caltrans standards, policies, and procedures, sound engineering practices and represents a quality product; and maintains frequent contact and communication with the Caltrans Project Manager to assure satisfaction with the progress and performance.

d. **Consultant Project Manager** - The Consultant Project Manager reviews and monitors the implementation of the QA/QC practices and processes and ensures consistency with Caltrans standards, policies, and procedures. The Consultant Project Manager identifies the quality control actions required to be taken, the resources to be applied to these quality control actions, and interaction of these activities with the other elements of work. In this process, it is essential that the Consultant Project Manager clearly identify the personnel involved and their duties; allocate time, effort, and resources to the quality control function; and reviews and revises the allocated resources appropriately as the work progresses. The Consultant Project Manager is responsible for production of the technical work produced by their staff. They also assist the

Project Managers in the execution of the Quality Management Plan. The Consultant Project Manager reports administratively to the Project Managers and works closely with them in the early identification and resolution of any product deficiencies. This includes but is not limited to:

- Perform periodic reviews of quality control documentation;
- Identification and control of nonconforming conditions

d. Technical Staff – Technical staff are responsible to their Consultant Project Manager for the quality of the work produced within their respective disciplines. In this capacity, technical staff establishes operating guidelines and areas of responsibility within the activity; monitors the work periodically to assure adherence to the contract scope of services and to the established reviewing procedures to ensure consistency with Caltrans standards, policies, and procedures, advises the Consultant Project Manager regarding the progress of work and of any circumstances that may require particular attention; reviews work prior to submittal to the Project Managers for quality control review; resolves QC review comments; insures comments are incorporated into the final document and reviews completed work before it is transmitted to the Project Managers for approval and submittal to the reviewing agencies.

Document Control

The designated agency or consultant shall make available and maintain electronic records and hard copies of drafts and final reports for inspection upon request during the development of the PSR-PDS.

Control of Sub-Consultants

If a portion of the scope of work is subcontracted out by the implementing agency's consultant, then all sub-consultants will have the same responsibilities as the Lead Agency consultant.

EXHIBIT A

EXAMPLE GENERAL LIST OF DELIVERABLES AND ASSIGNED QC REVIEWERS

Task No	Deliverable	Consultant Reviewer	Lead Agency Reviewer
1.0	Project Management Plan	Name	Name
1.1	Project Schedule		
1.2	QA/QC Plan		
2.0	Draft Project Purpose and Need		
3.0	Corridor Study Base Mapping		
4.0	Alternatives Evaluation & Screening		
4.1	Right of Way Data Sheet and Cost Estimate Mapping		
5.0	Traffic Analysis Workplan		
6.0	Environmental Evaluation Workplan		
7.0	Stormwater Data Report		
8.0	Geometric Evaluation Workplan		
9.0	Other discipline areas to be evaluated		
10.0	Draft PID Report Review		
11.0	Final Report Approval		

EXHIBIT B - EXAMPLE QUALITY CONTROL REVIEW FORM
Quality Control Review Sign-Off Form

Client:		**Date to Reviewer:**	
Project Name:		**Review Deadline:**	
Client & Job Number:		**Actual Review Date:**	
Project Manager:		**Deliverable Due Date:**	
Reviewer:		**Actual Hours:**	
Production Coordinator:		**Project Type:**	
Item Reviewed:		**Task/Activity:**	
Project Task or Phase:			

Deliverable %: _____ **Internal Review** **External Review**

Type of Review	Comment Sheet Attached/Emailed	Completed by Reviewer	
		Initial	Date
Reports:			
Environmental			
Master Plans			
Reports and Documents			
Technical Memorandum			
Other:			
Design:			
Architectural			
Calculations			
Civil			
Cost Estimates			
Electrical			
Spec and/or Front-Ends			
Instrumentation & Control			
Mechanical			
Plan & Profile (Pipeline)			
Process			
Structural			
Stormwater			
Other:			
Miscellaneous:			
Submittal/Previous QC Backcheck			
Drafting Backcheck			
Project Guide			
O&M Manuals			
Survey Datums & Sea Level Rise			
Other:			

Notes:
Please return "signed" QC Review Sign-off Form and markups to your assigned Production Coordinator.

Signatures:

_____ _____
Project Manager **Date - Response to Comments**

QC Reviewer	Date - Resolution Accepted

Instructions:
1) Project Manager fills out QC Review form & transmits to assigned QC Reviewer with document(s); 2) After review, QC Reviewer returns reviewed document/completed QC Review form to PM with comments: 3) Project Manager is responsible for reviewing comments, making appropriate changes/notations, & informing QC Reviewer of changes made; 4) QC Reviewer completes form upon resolution.

QA-QC Program Coord.	Signature	Date

Source Acknowledgement: Project Quality Management Plan developed for SR 152 Corridor Management Study, prepared for VTA by HDR Engineering, Inc., July 2009.

ARTICLE 10

Risk Register

General Guidance:

The PSR-PDS PID requires that the project sponsor complete a risk assessment. The reduced amount of data that is required for the PSR-PDS transfers risks to future phases and it is important to identify the risk, define the probability, define the severity, identify who or what the risk will impact, and identify the ownership of the risk. The project manager, project sponsor, and project team members jointly develop a written plan that enables them to identify, assess, quantify, prepare a response to, monitor, and control capital project risks. Refer to the Project Risk Management Handbook located at: and use the Risk Register template in completing the plan.

The Project Risk Management Handbook is located at: http://www.dot.ca.gov/hq/projmgmt/documents/prmhb/caltrans_project_risk_management_handbook_20070502.pdf. The Risk Register template is located at: http://www.dot.ca.gov/hq/projmgmt/guidance_prmhb.htm.

ARTICLE 11

Division of Engineering Services PSR-PDS Scoping Checklist

The Division of Engineering Services (DES) developed the PSR-PDS Scoping Checklist to accurately identify the products and services required from DES functional units for STIP projects.

- The District is responsible for completing all sections except the "Workload Estimate" section.

- The DES Project Liaison Engineer will provide assistance to the District Project Manager to complete the checklist.

Sections of the checklist include general project information, project type, alternative descriptions, project schedule, and estimated cost range. Detailed sections on project scope clarify involvement of the following:

- Structure design,
- Geotechnical services,
- Structure hydraulics,
- Preliminary investigations,
- Transportation architecture,
- Materials and testing services,
- Structures and electrical,
- Mechanical,
- Water,
- Wastewater design.

Technical specialist design for culverts, barriers, sign and overhead sign structures are also included on the checklist.

The "Workload Estimate" section is included for the District Project Manager and provides the estimate in PYs, required for DES products and services up to WBS 180 for the project. The DES PSR-PDS Checklist is summarized in the PSR-PDS document.

Division of Engineering Services
PSR(PDS) Scoping Checklist

Project Information

District County Route (Post Mile) EA

Project Description:

Project Manager Phone #

DES Project Liaison Engineer* (PLE): **Select a PLE from pulldown**

DES Special Funded Projects Liaison Engineer: Phone #

DES Consultant Management Engineer: Phone #

*The Project Liaison Engineer will provide assistance with the completion of this form.

Project Scope

Describe and identify in the following sections a general description of all improvements anticipated as part of the project scope that will require DES functional unit involvement. The project should be discussed in sufficient detail to accurately identify the involvement of DES to study the various alternatives. The PSR(PDS) is used to program support $ for the Project Report and Environmental Document Phase of the project ONLY, and to commit to a schedule for the completion of PR & ED Phase.

Check applicable boxes describing proposed scope of project.

- ☐ New Expressway/Freeway on new alignment
- ☐ Construct Interchange
- ☐ Modify Interchange
- ☐ Bridge Replacement (New alignment? ☐ Yes ☐ No)
- ☐ Bridge Rehabilitation
- ☐ New Bridge
- ☐ Bridge Seismic Retrofit
- ☐ Other Design: Explain:
- ☐ Other Roadway Realignment
- ☐ Emergency/Storm Damage
- ☐ Bridge Widening
- ☐ Curve Correction
- ☐ Building Project
- ☐ Median Barrier Retrofit
- ☐ Construct Passing Lane
- ☐ Soundwall/Retaining Wall
- ☐ Roadway Rehabilitation
- ☐ Widen Highway
- ☐ Rockfall Project
- ☐ Left-turn Pocket
- ☐ Modify Slope
- ☐ Stabilize Subgrade
- ☐ Stabilize Roadway
- ☐ Landslide/Slip-out
- ☐ Bridge Deck Rehab.
- ☐ Bridge Joint Seals

Briefly describe proposed scope of DES involvement for all alternatives.

Alternative 1:

Alternative 2:

Alternative 3:

Project Schedule

Product or Milestone	Delivery Date	Work Performed By	
		Caltrans	Consultant or Local Agency
PSR/PSR(PDS)/PSSR		☐	☐
PR(or PA/ED*)		☐	☐
Structure Site Data Submittal		☐	☐
Draft SPS&E (i.e. Activity 240 finish date)		☐	☐
PS&E ☐ AADD		☐	☐
RTL		☐	☐
Construction Contract Acceptance		☐	☐

*Note: Only the PA/ED milestone is to be used for programming commitments. All other milestones are used to indicate relative time frame for planning purposes.

Project Programming

☐ SHOPP ☐ STIP ☐ EMERGENCY ☐ MAINTENANCE ☐ MINOR A/B ☐ Other: _____

Project Cost

For PSR (PDS) projects, the following section is to be used for EACH alternative, provided that the scope is significantly different.

Alternative #

Project Cost Range ($ 1000's)		Cost of Largest Structure ($ 1000's)
Roadway	$	$
Structure**	$	
Total	$	

**Structure Cost Range to be provided by (check one)

☐ Consultant ☐ Structure Design Technical Liaison.

Project Scope Breakdown by DES Function

Photogrammetry*

☐ Aerial Photography			
☐ Raster Imaging:	Est. Total Length (km)	Est. Avg. Width (m):	
☐ DTM Modeling (non-district):	Est. Total Length (km)	Est. Total Width (m):	
☐ Mapping:	Est. Total Length (km)	Est. Avg. Width (m)	Scale:

*Note: A Photogrammetry Service Request-PSR(PDS) must be completed and submitted to DES Photogrammetry by the District Photogrammetry Coordinator.

Bridge Design Services (check applicable boxes)

Design by:

- ☐ Office of Structure Design
- ☐ Structure Maintenance Design
- ☐ Office of Structure Contract Management (Consultant Design Oversight)
- ☐ Office of Special Funded Projects (Consultant Design Oversight)

Bridge Information:

☐ New Bridge(s)	Number	Br. Name(s) & No(s).
☐ Bridge Replacement(s)	Number	Br. Name(s) & No(s).
☐ Bridge Widening(s)	Number	Br. Name(s) & No(s).
☐ New Bridge over water	Number	Br. Name(s) & No(s).
☐Bridge Replacement over water	Number	Br. Name(s) & No(s).
☐Bridge Widening over water	Number	Br. Name(s) & No(s).
☐ Bridge Rail Replacement(s)	Number	Br. Name(s) & No(s).
☐Approach Slab	Number	Br. Name(s) & No(s).
☐Bridge with Railroad Involved	Number	Br. Name(s) & No(s).
☐Bridge w/ Scour Analysis	Number	Br. Name(s) & No(s).
☐Bridge w/ Special Design or Retrofit	Number	Br. Name(s) & No(s).

Other DES functional units required for Structure Work

- ☐ Structure Hydraulics (include if bridge is over or adjacent to water)
- ☐ Preliminary Investigations (Structure Foundation Plan)
- ☐ Geotechnical Services (Structure Foundations)

Wall Design Data for Structure Design & Geotechnical Services

☐ Soundwall(s) Number	Est. Max. Ht Est. Length	☐ Standard Design	☐ Special Design
☐ Ret. walls(s) Number	Est. Max. Ht Est. Length	☐ Standard Design	☐ Special Design
☐ MSE Wall(s) Number	Est. Max. Ht Est. Length	☐ Standard Design	☐ Special Design

Geotechnical Services

Is Oversight for consultant prepared geotechnical reports required?

☐ Yes ☐ No

Has the Geotechnical Design Liaison or other geotechnical person been contacted?

☐ Yes ☐ No If yes, who?

Terrain	☐ Flat	☐ Rolling	☐ Mountainous	
Cuts:	Est. Max Height (m)	Est. Volume (m^3):	☐ New	☐ Widen
Fills:	Est. Max Height (m)	Est. Volume (m^3):	☐ New	☐ Widen

Sign Structures

☐ Overhead Sign Foundations	Number
☐ Changeable Message Sign Foundations	Number

Other:

- ☐ Special Studies (slope stability, rockfall, erosion, seepage, ground water, settlement, liquefaction, slipout repair, rock slope, etc.) Explain
- ☐ Existing Maintenance Problems: Explain:

Technical Specialist Design

Anticipated insertable plan sheet(s) check below:

☐ Culvert(s)	Number
☐ Barrier(s)	Number
☐ Signs and Overhead Structures	Number
☐ Other Design:	Explain:

Transportation Architecture Design

☐ Design New Building(s)	Explain:
☐ Remodel Existing Buildings(s)	Explain:
☐ Bridge Aesthetics Evaluation	Explain:
☐ Build scale model	Explain:
☐ Other Aesthetics work	Explain:

Electrical, Mechanical, Water & Wastewater Design

☐ Pumping Plants	Explain:
☐ Movable bridge, drawbridge	Explain:
☐ Lighting control system for facilities	Explain:
☐ Sanitary Systems	Explain:

Materials Engineering & Testing Services

Pavement

☐ Rigid ☐ Flexible	Average Grade	Average Superelevation
☐ Deflection Studies Required	No. of Locations	Lane/miles to be tested

Consultation and Inspection

☐ Loop detectors	☐ Signal & Lighting Products	☐ Changeable Message Signs, Closed Circuit TV
☐ Concrete Bridge	☐ Steel Bridge	

Corrosion Tests

☐ Soil	☐ Concrete	☐ Cathodic Protection System

Other

☐ Special Products:	Explain

Structure Construction

Oversight for consultant construction administration required? ☐ Yes ☐ No

Division of Engineering Services Workload Estimate for PSR (PDS)				
	Alternative Number			
WBS	1	2	3	4
100				
150				
160				
165				
175				
180				
Total PY's per Alternative				
			Total Project PY's	

Additional Studies, Investigations or Research from DES

Identify additional studies or investigations that may be required from DES Functional Units.

Reviewed by:

Project Manager _____ **Date** _____

CHAPTER 6 – PSR-PDS Templates

This Chapter contains two templates for the PSR-PDS PID: 1). Template for STIP projects and projects funded by others, and 2). Template for Long Lead SHOPP projects. Guidance for completing these templates is located in Chapter 3 of this appendix. These templates should be modified to include or exclude any applicable deficiencies or issues. If appropriate, the tables used in the scoping tools found in Chapter 5 of this appendix can be used to present project information.

When using any template, delete any italicized text. The italicized text provides instructions for users of the templates and does not provide any value to the report

ARTICLE 1- Template for Project Study Report Project Development Support (PSR–PDS) Project Initiation Document

This article is a template for the PSR-PDS for STIP projects and projects funded by others. Guidance for completing this template is located in Chapter 3 of this appendix.

PROJECT STUDY REPORT-PROJECT DEVELOPMENT STUDY (PSR-PDS)

To

Request Programming for Capital Support (Project Approval and Environmental Document Phase) In the 20__ STIP

On Route_____

Between_____

And _____

APPROVAL RECOMMENDED:

_____
PROJECT SPONSOR, Accepts Risks Identified in this PSR-PDS and Attached Risk Register

_____
CALTRANS PROJECT MANAGER

APPROVED:

_____ _____
DISTRICT DIRECTOR (or delegated authority) *DATE*

Vicinity Map

Show:

- Project limits
- Topographical Features Listed in Report
- North Arrow

On Route_____

Between_____

And _____

Dist. - Co. - Rte. - PM.

This Project Study Report (Project Development Support) has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

_____ _____

REGISTERED CIVIL ENGINEER *DATE*

Table of Contents

I. INTRODUCTION

Brief Project Description:

_____

_____

See the Cost estimate for specific work items included in this project.

Project Limits Dist., Co., Rte., PM)	
Number of Alternatives:	
Capital Outlay Support for PA&ED	
Capital Construction Cost Range (excluding "no build").	
Right of Way Cost Range (excluding "no build").	
Funding Source:	
Type of Facility (conventional, expressway, freeway):	
Number of Structures:	
Anticipated Environmental Determination or Document:	
Legal Description	
Project Category	

The remaining support, right of way, and construction components of the project are preliminary estimates and are not suitable for programming purposes. Either a Supplemental PSR or Project Report will serve as the programming document for the remaining support and capital components of the project. A project report will serve as approval of the "selected" alternative. (For a locally sponsored project, this language may not be included or may need to be modified.)

Other approvals required are:

1. BACKGROUND

2. PURPOSE AND NEED STATEMENT

Need:

Purpose:

3. DEFICIENCIES

4. CORRIDOR AND SYSTEM COORDINATION

5. ALTERNATIVES

6. **TRAFFIC ENGINEERING** – (Refer to relevant findings, recommendations, and estimates provided in the Traffic Engineering Performance Assessment – Chapter 5, Article 5 of this appendix).

7. RIGHT OF WAY - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

UTILITIES - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

RAILROAD - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

8. STAKEHOLDER INVOLVEMENT

9. ENVIRONMENTAL DETERMINATION/DOCUMENT

10. FUNDING

A. Capital Cost

Capital Outlay Estimate

	Range for Total Cost	STIP Funds	Fund Source "A"
Alternative 1			
Alternative 2			
Alternative 3			
Alternative 4			

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and is useful for long-range planning purposes only. The capital costs should not be used to program or commit capital funds. The Project Report will serve as the appropriate document from which the remaining support and capital components of the project will be programmed.

B. Capital Support Estimate for the Programmable PA&ED in the 20__ STIP for this project: $_____

11. SCHEDULE

Project Milestones	Delivery Date (Month, Year)
Begin Environmental	
Circulate DED	
PA /ED	

The anticipated funding fiscal year for construction is 20__/__.

12. FHWA COORDINATION

Discuss coordination with FHWA. Refer to Chapter 3, Article 1, #13 of this appendix.

13. DISTRICT CONTACTS

14. PROJECT REVIEWS

Field Review_____ Date___
District Maintenance_____ Date___
District Safety Engineer_____ Date___
HQ Design Coordinator_____ Date___
Project Manager District Safety Review_____ Date___

ARTICLE 2 – Template for Project Study Report Project Development Support (PSR-PDS) Long Lead SHOPP Project

This article is a template for the PSR-PDS for Long Lead SHOPP projects. Guidance for completing this template is located in Chapter 3 of this appendix.

PROJECT STUDY REPORT

To

Request Approval to Proceed with Formal Studies for Long Lead SHOPP Project

On Route_____

Between_____

And _____

APPROVAL RECOMMENDED:

_____
PROJECT MANAGER

APPROVED:

_____ _____
DISTRICT DIRECTOR (or delegated authority) *DATE*

Vicinity Map

Show:

- Study limits
- Topographical Features Listed in Report
- North Arrow

On Route_____

Between_____

And _____

Dist. - Co. - Rte. - PM.

This Project Study Report has been prepared under the direction of the following Registered Engineer. The registered civil engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

_____ _____

REGISTERED CIVIL ENGINEER *DATE*

Table of Contents

I. INTRODUCTION

Brief Project Description:

_____

_____

See the Cost estimate for specific work items included in this project.

Project Limits [Dist., Co., Rte., PM]	
Capital Outlay Support	
Funding Source:	SHOPP
Capital Cost Range:	
Right of Way Cost Range:	
Type of Facility (conventional, expressway, freeway):	
Number of Structures:	
Anticipated Environmental Determination/Document	
Legal Description	

The remaining support and capital components of the project are preliminary estimates and are not suitable for programming purposes. Either a Supplemental PSR or Project Report will serve as the programming document for the capital for the project.

1. BACKGROUND

2. PURPOSE AND NEED STATEMENT

Need:

Purpose:

3. DEFICIENCIES

4. CORRIDORS AND SYSTEM COORDINATION

5. ALTERNATIVES

6. TRAFFIC ENGINEERING – (Refer to relevant findings, recommendations, and estimates provided in the Traffic Engineering Performance Assessment – Chapter 5, Article 5 of this appendix).

7. RIGHT OF WAY - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

UTILITIES - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

RAILROAD - (Refer to relevant findings in Conceptual Cost Estimate and Request – Right of Way Component – Chapter 5, Article 7 of this appendix).

8. STAKEHOLDER INVOLVEMENT

9. ENVIRONMENTAL DETERMINATION/DOCUMENT

10. FUNDING

A. Capital Cost

Capital Cost Estimate for the Alternative Identified for Programming PA&ED in the 20XX SHOPP.

Capital Outlay Estimate

	Range for Total Cost	SHOPP Funds
Alternative 1		
Alternative 2		
Alternative 3		
Alternative 4		

The level of detail available to develop these capital cost estimates is only accurate to within the above ranges and is useful for long range planning purposes only. The capital costs should not be used to program or commit capital funds. The Project Report will serve as the appropriate document from which the capital for the project will be programmed.

B. Capital Support Estimate

Capital Support Estimate for PA&ED for this project: $_____.

11. SCHEDULE

Project Milestones	Delivery Date (Month, Day, Year)
Begin Environmental	
Circulate DED	
PA&ED	

The anticipated funding fiscal year for construction is 20__/__.

12. FHWA COORDINATION

Discuss coordination with FHWA. Refer to Chapter 3, Article 1, #13 of this appendix.

13. DISTRICT CONTACTS

14. DISTRICT REVIEWS

Field Review_____ Date___
District Maintenance_____ Date___
District Safety Engineer_____ Date___
HQ Design Coordinator_____ Date___
Project Manager District Safety Review_____ Date___

For SHOPP Projects Only- Delete if not applicable:
District SHOPP Program Advisor_____ Date____
HQ SHOPP Program Advisor_____ Date____